

MARCH 2023

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UPFRONT

- 05 CEO's Message
-

ADVOCACY IN ACTION

- 07 News from the Front
10 MPP Lobby Day
11 P.Eng. Day 2023
-

FEATURED CONTENT

The Potential of Artificial Intelligence

14



- 19 Civil Liberties and Data: Building Equity, Agency, and Accountability

PROFESSIONAL DEVELOPMENT

- 22 Certificate Programs
23 Journey to P.Eng.



2023 BOARD ELECTIONS

- 27 Candidate Profiles
28 Nicholas Burgwin, P.Eng.
29 David Carnegie, P.Eng.
30 Mark Egbedeyi-Emmanuel, P.Eng.
31 Bholu Ajay Giri, P.Eng.
32 Meggen Janes, M.Sc., QPRA, QPESA, P.Eng.
33 Changiz Sadr, P.Eng., FEC, CISSP
34 Caroline Wojtyla, P.Eng.
-

NATIONAL ENGINEERING MONTH

- 36 Fireside Chats
37 Public Engineering Events
-

MEMBER PROFILE

- 38 Bob Awharen, EIT

THE VOICE

OF ONTARIO'S ENGINEERS

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Hi there, and welcome to the first digital-only issue of **The Voice**.

OSPE is excited about this change because it enables us to continue to bring you vibrant content, more quickly and cost-effectively than ever before. Best of all, it reduces the long lead times that the typical print production cycles required in the past.

In the pages of this first digital issue, you will see content from our annual **Lobby Day** and **P.Eng. Day**, both of which happened just last week. We could never have reported on these events so quickly in the past.

Personally, I am thrilled that more and more our advocacy work is getting noticed, and our ability to influence policy in favour of not just the engineering community, but the province, is growing. I am consistently impressed with the way that the expertise of our membership is of value to government and industry, and how we are able to engage members of both groups to make sure that engineers have a seat at the decision-making table.

Speaking of input, now is the time we need your input in shaping our next Board of Directors. Our Annual General Meeting is fast approaching and we welcome your participation in choosing our next crop of volunteer leaders who will participate in the governance of the organization. These are critical factors in making sure that we will continue to serve you smartly.

Lastly, I would like to thank our **Research and Innovation Task Force** for contributing to this launch issue. The subject of **Artificial Intelligence** is going to shape the rest of this century, and engineers are at the forefront of that wave. The thing that we always have to be vigilant about is that the adaption and adoption of these technologies are serving humanity and not creating new divides in our society.

With the move to digital, we are back to four issues per year, which also means I have more opportunities to engage you in this space. I hope you enjoy this “first” issue, and please do let us know how we can improve.



Sandro Perruzza
Chief Executive Officer
Ontario Society of Professional Engineers

A handwritten signature in black ink that reads "Sandro Perruzza". The signature is written in a cursive, flowing style.



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ADVOCACY: NEWS FROM THE FRONT

In the first quarter of 2023, OSPE has been hard at work on our advocacy priorities.



INDOOR AIR QUALITY

As society emerges from the COVID-19 pandemic, there is a greater understanding of the importance of indoor air quality. In January 2023, OSPE met with **MPP Chandra Pasma** (Education Critic) and **MPP Bhutila Karpoche** (Child Care Critic) to discuss their private bill on school ventilation improvement. OSPE also met with the Pandemic Workplace Safety Branch and the Ministry of Labour, Immigration, Training and Skills Development to discuss adapting provincial construction codes and ventilation rules to promote safer indoor air.



CLIMATE CRISIS

As extreme weather events and long-term change continue to touch our world, Ontario must take quick action to mitigate the effects of the Climate Crisis. This was the focus of OSPE's meeting with **MPP Mike Schreiner** (Leader of the Green Party of Ontario) on February 28. In this meeting, we restated our opposition to the current government's proposed construction of Highway 413 and proposed amendments to the Greenbelt Plan (which would allow development on these protected lands). We also identified other opportunities to build a greener Ontario.



REGULATORY REFORM

Engineers play a key role in public safety, and the profession requires effective regulation to protect its reputation and maintain public trust. On February 28, OSPE met with the **Hon. Doug Downey** (Attorney General) to discuss concerns regarding Professional Engineers Ontario's current regulatory practice. The meeting centred on how OSPE can help the Attorney General reform the regulator's operations and governance, and eliminate bias from licensing and regulation operations.



ENERGY

Amidst economic upheaval and a growing Climate Crisis, it is imperative for Ontario to power itself with clean, cost-effective energy. On February 28, OSPE met with the **Hon. Todd Smith** (Minister of Energy) to share guidance on decarbonizing the province's energy grid and identify how the association can work with the province on other energy initiatives.



SUSTAINABLE CITIES

To maximize economic benefits and minimize environmental impacts, Ontario must heed the guidance of engineers in planning public works projects. OSPE met with the **Hon. Kinga Surma** (Minister of Infrastructure) on February 28 and urged the government to reuse concrete aggregates in construction projects instead of building new quarries near urban centres. OSPE also discussed other opportunities for the association to work with government leaders for the benefit of Ontarians.

Working Towards Your P.Eng.? OSPE is Your Home.



As of May 15, 2023, Professional Engineers Ontario will no longer offer the Engineering Intern (EIT) designation to new applicants. In light of this change, OSPE will continue to provide a home for engineering students and graduates working towards their P.Eng. designation.

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OSPE's job board features openings from Ontario's top engineering employers.

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Members get access to free workshops on resume building, interviewing, using LinkedIn, and more.

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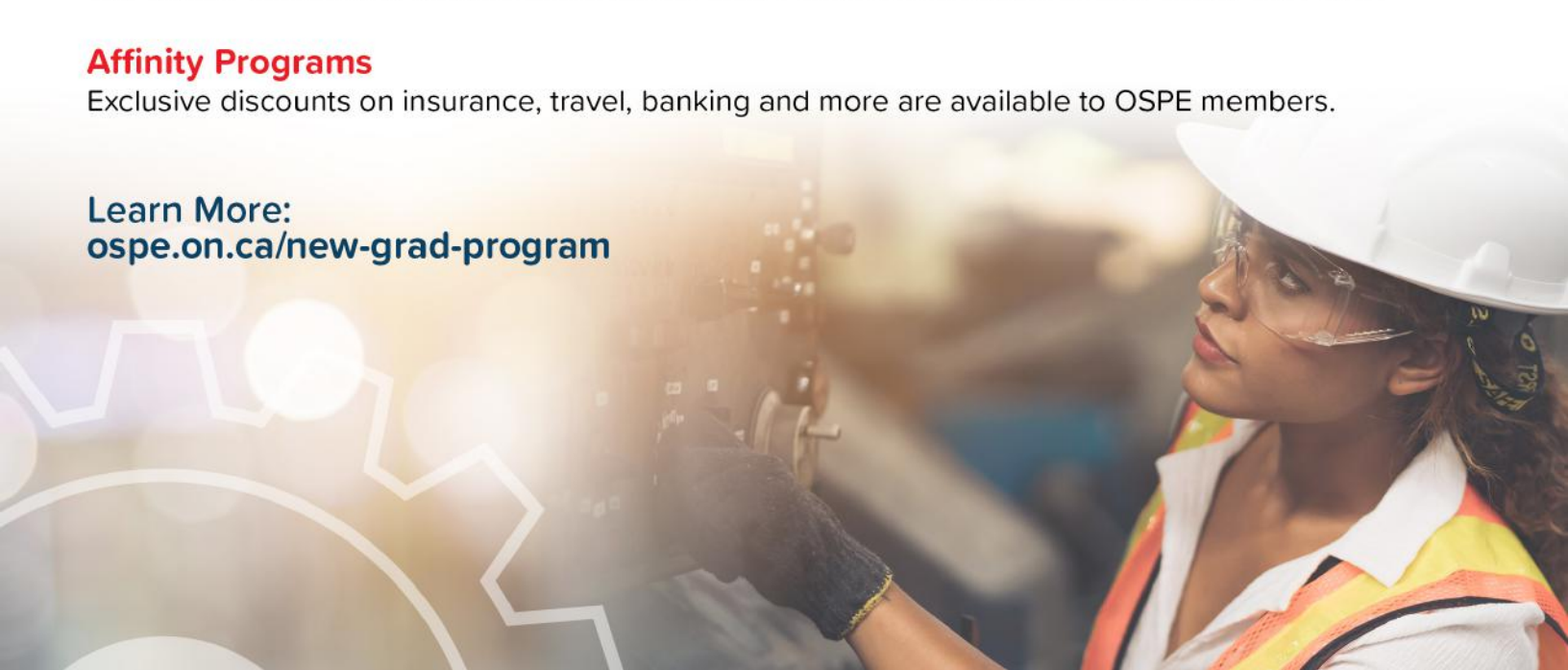
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MPP LOBBY DAY 2023

On February 28, OSPE met with government leaders at Queen's Park to discuss our ongoing advocacy initiatives. We are pleased to represent the interests of Ontario's engineering community and work with the government on the critical issues facing our province.



(L-R) Attorney General Doug Downey with Research and Innovation Task Force Chair Beatrice Sze, P.Eng.



Ontario Green Party Leader Mike Schreiner delivers remarks.



(L-R) OSPE CEO Sandro Perruzza chats with Deputy Opposition Leader Doly Begum.



(L-R) Energy Minister Todd Smith shares a laugh with Energy Task Force Chair Stephen Pepper, P.Eng.



Interim Ontario Liberal Party Leader John Fraser addresses guests.

P.ENG. DAY 2023

On March 1, OSPE celebrated P.Eng. Day with a National Engineering Month Kick-Off Event at the Ontario Science Centre. This event gathered faculty from Humber College, McMaster University and Lakehead University for a discussion on the future of engineering education.



AT CENTRE: Dr. Marilyn Powers, P.Eng. (President and Chair, OSPE) cuts the cake with the evening's guests and speakers.



Dr. Heather Sheardown, P.Eng. (Dean, McMaster University Faculty of Engineering) answers audience questions.



Jennifer Quaglietta, P.Eng. (CEO and Registrar, Professional Engineers Ontario) offers greetings.



(L-R): Dr. Janusz Kozinski, P.Eng. (Dean, Lakehead University Faculty of Engineering) and Dr. Farzad Rayegani, P.Eng. (Senior Dean, Humber College Faculty of Applied Sciences & Technology) share their thoughts.



OSPE CEO Sandro Perruzza delivers closing remarks.

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Leading the Way

Highlights from OSPE's Research and Innovation Task Force

Technology continues to advance at a staggering pace. It can be difficult for engineers working in various fields to keep abreast of the disruptive technologies emerging in different sectors. OSPE's Research and Innovation (R&I) Task Force continues to serve Ontario's engineering community by facilitating high quality technical white papers authored by thought leaders within our membership.

Here are some highlights that were developed in 2022:

- Peter Darveau, P.Eng. and Emanuel Corthay P.Eng., assisted by Ryder LeBlanc, M.Eng., provided a comprehensive overview of Artificial Intelligence. The fundamental question "What is AI?" remains a widely misunderstood matter. Their white paper answers that question.
- Andrea Carmona asked thoughtful questions relating to Civil Liberties and Data. While hers is not a technical paper, it does ask critical questions of those who are stewarding emerging technology.

These are just a few of the white papers that the R&I Task Force developed in 2022. In 2023 we will continue to showcase engineering thought leadership by exploring: "What is Quantum Computing?"; "Clean – Technologies: Some Promising Examples"; and "Where Engineering and Privacy Intersect." Tune in throughout the year for the task force's forthcoming white papers and reports.



Beatrice Sze, P.Eng.

Chair – Research and Innovation Task Force

If you have a technical topic that you would like featured, please reach out to advocacy@ospe.on.ca.



The Potential of Artificial Intelligence

Peter Darveau, P.Eng. and Emanuel Corthay, P.Eng.
with Ryder Leblanc, M.Eng.



There is much hype about Artificial Intelligence (AI) in the media, often with grim predictions about job losses or the disappearance of people at the hand of super intelligent machines. While risks exist, the potential benefits are immense, with some putting the additional economic output of AI at around \$13 trillion by 2030, boosting global GDP by about 1.2 per cent a year (McKinsey). There is no single technology that currently has farther reaching implications than AI, which has applications in all fields including healthcare, law, farming, e-commerce, manufacturing, banking, and construction. It is already disrupting many industries and causing profound transformations by enabling machines to assist people in ways previously unimaginable. Used properly, AI can generate more sustainable growth, improve safety, and improve social equity. This, however, requires the careful application of safe and ethical AI principles by professionals trained in the strengths and weaknesses of this technology, and the availability of large amounts of good quality data.

What is AI?

The basis of an AI system is to perceive the surrounding environment, obtain information, make predictions, and complete tasks with the help of various sensors. These systems can either make decisions or merely assist people in the decision-making process. Using AI is a paradigm shift, moving away from the traditional “programming” that requires each possible case to be hard coded, to a world where a large amount of historical data is provided and the computer “learns” to model the right outcome based on past inputs and answers.

Opportunities for AI

Problems that are not easily described in a coded format, or those without a finite number of cases, are the most likely to benefit from AI. Problems that require understanding the natural world by recognizing elements of pictures (detecting obstacles in a car, cancer in X-ray images, or categorizing pictures of cats), speech (Google Assistant), or text are currently being handled by AI. But there are also many other use cases that are less known, such as the use of AI to sift through large amounts of legal contracts to extract relevant information quickly (Faggella), identifying defects in machines early by analyzing the subtle differences in the sounds they make while running (Campbell), and identifying patterns in stock trading to predict future performance (Ellaji).

THE ACHILLES' HEEL OF AI – THE DATA

AI is only as good as the data that was used to train the system, both in terms of quality and quantity. Take, for example, an AI system used to sort through resumés in the HR department of a large company. If that company has always tended to favor a certain gender in its hire, then the system will perpetuate this bias as it will have “learned” or inherited that bias from the historical hiring data. Similarly, an AI system used to screen X-ray images to detect cancer cells may work better for white populations if its available reference data is dominantly from white subjects. The consequences of a bad AI system can have immense repercussions and thus require careful consideration by trained professionals (NI Business Info).

Considerations required for the implementation of an AI system include its design, the management of its training data, its deployment, and how it will be monitored and maintained throughout its entire lifecycle. Indeed, an

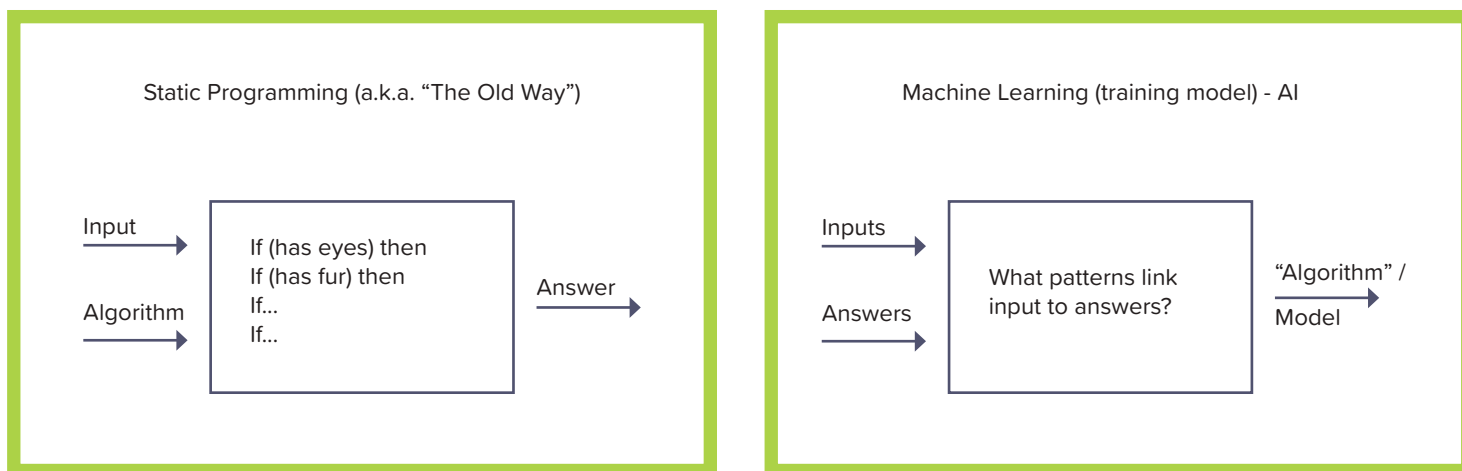


Figure 1: The AI paradigm shift

AI system that works at one point in time or in one environment is not guaranteed to work in the future or with varied conditions. It needs to adapt to a changing environment and must be carefully changed, managed, and continuously tested to maintain safety, fairness, and integrity. This is quite different from previous, non-AI software systems that were paradoxically more robust due to simpler logic and more limited input. The logic of these systems is simpler to understand and often relies on people to apply the more subjective aspect of interpreting the results upstream (for example, by visually classifying images in healthcare). By contrast, explaining why an AI system is making a certain decision or reaching a certain confidence level is often difficult. Even worse, such systems can be vulnerable to carefully crafted inputs that bad actors can create to purposefully trick an AI system. For example, in a world where AI software is increasingly part of larger machines such as cars with autopilot assistants, it could become possible to push the car to turn off-road by applying a specific pattern on the road.

Another area of concern is using personal information in AI systems. Beyond the publicly documented abuse of using facial recognition to track people without their consent, there are many other scenarios where allowing the collection and use of data (for example, by government agencies to improve public services) is beneficial. This has led to the creation of principles of ethical and safe AI by various government and regulatory bodies around the globe to address these concerns.

TYPES OF AI

Artificial intelligence can be divided into three categories: (1) operational intelligence, (2) perceptual intelligence, and (3) cognitive intelligence. Operational intelligence is the ability to compute rapidly and store memory. The natural advantage of a computer is its great computing and storage power. Enterprise Resource Planning (ERP) systems, software solutions that integrate all of the processes needed to run a company, are examples of this. Perceptual intelligence is the use of vision, smell, taste, and hearing. It allows the system to interact with the environment by means of visual, auditory, and other stimuli to perceive the outside world and obtain information. A smartphone can perceive the environment via sensory devices such as cameras, microphones, and corresponding software algorithms like Siri. Cognitive intelligence is the ability to understand, analyze and judge. Humans' understanding of language, judgment, individuals' consciousness, and inferences of concepts are all expressions of cognitive intelligence. Presently, AI technology is in the transition from perceptual to cognitive intelligence.

STATE OF AI IN ONTARIO

Canada is at the forefront of this new enthusiasm for AI, with leading academic research clusters at top Canadian institutions. In Ontario, those institutions are the University of Waterloo, McMaster University, and the University of Toronto. It is an extremely active area and fueled mostly by fintech, automotive, and biotech start-ups.

In 2019, fintech alone accounted for \$2.7 billion in investments (Invest Ontario). Massive investments in Deep Genomics (Deep Genomics), Waabi (Korosec), and iHub at McMaster University are recent examples of funding in the biotech and autonomous vehicle sectors. The dynamism in these sectors explains Ontario's increasing influence in Big Data ethics around AI technology. Many more AI start-ups provide value chain (Stanford Graduate School of Business), asset prognostics and health management (Biggio & Kastanis), and risk management solutions (FERMA) to help businesses improve their operations, mostly by taking advantage of affordable high-performance computing that drives perceptual AI technology - reading, visualization (gaze, depth, recognition, detection), and speech (generation, recognition, translation).



Questions for OSPE members:

- What do you think your top 5 challenges are to support AI applications where you work?
- What skills and training do you think are needed to implement AI?
- Does your company have a framework put together to start adopting AI? How do you avoid AI projects becoming stuck in proof of concept purgatory?
- There is a tendency for industry to think AI only resides in the IT space. That is a misconception. Where do you think engineering becomes central to AI both in terms of application and safety? Do you know of any examples?
- Because the career path isn't obvious, it's actually difficult to find technical leaders for these types of projects. How do you approach similar issues in your organization? Does AI fit well?

Join the conversation by sharing your thoughts on our LinkedIn Channel: www.linkedin.com/company/ontario-society-of-professional-engineers/



Works Cited

Biggio, Luca, and Kastanis, Iason. "Prognostics and Health Management of Industrial Assets: Current Progress and Road Ahead." *Frontiers in artificial intelligence* vol. 3 578613. 9 Nov. 2020, doi:10.3389/frai.2020.578613 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7861342/>

Campbell, Rebecca. "AI Can Now 'Listen' to Machines to Tell If They're Breaking down." *TNW | Artificial-Intelligence*, 4 July 2018, www.thenextweb.com/news/machine-failure-predictive-analytics

Deep Genomics. "Deep Genomics Raises \$180M in Series C Financing." Deep Genomics, 28 July 2021, www.deepgenomics.com/news/deep-genomics-raises-180m-series-c-financing

Ellaji, C. H., et al. "AI-based approaches for profitable investment and trading in stock market." *Materials Today: Proceedings* (2021)

Faggella, Daniel. "AI in Law and Legal Practice – a Comprehensive View of 35 Current Applications." *Emerj*, 7 Sept. 2021, www.emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications

FERMA. *Artificial Intelligence Applied to Risk Management*. Nov. 2019, <https://www.ferma.eu/app/uploads/2019/11/FERMA-AI-applied-to-RM-FINAL.pdf>

Korosec, Kirsten. "AI Pioneer Raquel Urtasun Launches Self-Driving Technology Startup With Backing From Khosla, Uber and Aurora." *Tech Crunch, Verizon Media*, 8 June 2021, www.techcrunch.com/2021/06/08/ai-pioneer-raquel-urtasun-launches-self-driving-vehicle-startup-with-backing-from-khosla-uber-and-aurora

Mckinsey Global Institute. *NOTES FROM THE AI FRONTIER MODELING THE IMPACT OF AI ON THE WORLD ECONOMY*. 2018, www.mckinsey.com/~media/McKinsey/Featured%20Insights/Artificial%20Intelligence/Notes%20from%20the%20frontier%20Modeling%20the%20impact%20of%20AI%20on%20the%20world%20economy/MGI-Notes-from-the-AI-frontier-Modeling-the-impact-of-AI-on-the-world-economy-September-2018.ashx

NI Business Info. "Risks and Limitations of Artificial Intelligence in Business | Nibusinessinfo.Co.Uk." NI Business Info, www.nibusinessinfo.co.uk/content/risks-and-limitations-artificial-intelligence-business. Accessed 18 Sept. 2021

Stanford Graduate School of Business. *Value Chain Innovation: The Promise of AI*. Oct. 2018, <https://www.gsb.stanford.edu/sites/default/files/publication-pdf/vcii-white-paper-value-chain-innovation-promise-ai.pdf>

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Civil Liberties and Data: Building Equity, Agency, and Accountability

Andrea Carmona, M.P.P.

Andrea holds a Master's of Public Policy from the University of Toronto's Munk School of Global Affairs & Public Policy.

As the world continues to embrace digital transformation and a data-driven global economy, governments, consumers, and companies are grappling with a new set of challenges. This transformation is fundamentally changing how we obtain information, goods, and services. It has shifted our interactions with systems and our ability to connect with others. As a society, we are becoming increasingly reliant on technology and automation – and questions arise regarding how and whose responsibility it is to mitigate potential harms.

This article identifies some of the questions being asked by policy-makers, advocates, and civil rights organizations across the globe. This is by no means an extensive account of the potential harms to individual rights and social cohesion that may be or are already a byproduct of technological advancements. However, it is focused on provoking thoughts about the importance of building equity, agency, and accountability into the data economy.

Who benefits from the digital economy?

The digital economy is defined by a “growing interconnectedness of people, organizations, and machines that results from the Internet, mobile technology, and the Internet of Things (IoT).”¹ One of the largest drivers of this transformation is the growing amount of data that the public, companies, and governments can access and produce. At its core, Big Data promises to enable better decision-making, improve public service delivery, enhance predictability of outcomes, and create economic efficiencies.

However, emerging technologies also present new challenges and risks. On a macro scale, one of the greatest challenges posed by the digital economy is its potential to further accentuate existing inequalities. In a recent publication titled *Bridging Connectivity Divides*, the Organization for Economic Co-Operation and Development (OECD) notes that without affordable access to broadband and high-quality communication networks and services, the benefits of digital transformation will not reach everyone.²

These disparities have been more evident during the COVID-19 crisis, where remote work and service delivery became default options, and those without connectivity

were unable to work, learn, and (in some cases) access basic goods and services. While expanding connectivity is a policy priority in Canada, there is a measurable divide between urban and rural populations. Connectivity speeds of 50/10 Mbps are available to 84 per cent of Canadian households; however, only 45.6 per cent of rural communities have access to this same quality of broadband.³ Without addressing this effectively, there will be segments of the population that cannot benefit from the data economy. This will impact their socio-economic position and further marginalize them.

In addition to considerations of access, it is important to note that technologies such as Artificial Intelligence (AI) can be developed and deployed in ways that negatively impact marginalized and equity-seeking populations. It can advance stereotypes, prejudice, and discrimination. We have seen evidence that human bias can permeate technology, and mechanisms must be developed to ensure inclusive design and application.



How much power do individuals have over the use of their data?

Data is consistently created by users through their online activities, including web browsing, email use, e-commerce, and the use of social media platforms and applications.⁴ Governments and institutions also collect data about individuals through a variety of mechanisms. As more data is collected, concerns arise around how it is used, stored, and protected. There are also questions regarding who owns the data and how much power individuals have over their own information.

One concerning example of harmful data application is the use of facial recognition software by state actors. A report by the Cybersecurity Policy Exchange, titled *Facing the Realities of Facial Recognition Software*, provides various examples of how facial recognition is used to track and identify people by governments across the globe.⁵ There is also evidence that the accuracy of automated systems such as facial recognition software varies by race, gender, and age, leading to greater inaccuracies for women and people of colour. Improper use of this technology can lead to a surveillance state where some groups are disproportionately targeted. In Canada, there is little transparency regarding when and

why federal institutions collect facial information and how it is used.

Concerns around data use also exist in transactions with private companies. Companies collect, store, and even sell consumer data to third parties. According to the Harvard Business Review, in 2020, collecting and selling consumer data was estimated to be a \$200 billion dollar business (referring specifically to data brokerage).⁶ Social media platforms have been criticized for monetizing their users through advertising to cover operating costs – creating an ethical dilemma regarding consent, power, privacy, and manipulation.⁷

Laypersons have little to no perceived control over their information, knowledge of how their data is being used, or understanding of how to prevent private and public actors from using their own data to harm them.

How can we build trust in the data economy?

Trust is one of the most important pillars of social cohesion and democracy. Data has the power to transform our society and provide significant benefits. But there are various concerns over how data is being governed and whether public interest trumps economic



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interests within the data ecosystem.

Sean McDonald discusses the importance of accountability and digital rights in his article *Data Governance's New Clothes*.⁸ McDonald critiques the lack of internal resilience and security that is built into data systems, and connects this to limited accountability by organizations. He argues that, as it stands, data governance models are a political cover rather than an effective way to ensure the integrity and security of the information collected. As such, these types of limitations generate distrust amongst the public.

Greater effort must be taken to involve the public in discussions regarding data, improve policies to ensure accountability, and increase transparency. State actors have a duty to serve and protect the public, and as such must ensure that data is not being used to harm, exploit, or limit individual rights and freedoms.

Works Cited

1. <https://www2.deloitte.com/mt/en/pages/technology/articles/mt-what-is-digital-economy.html>
2. <https://www.lowyinstitute.org/the-interpreter/transformative-potential-big-data>
3. <https://crtc.gc.ca/eng/internet/internet.htm>
4. <https://www.lowyinstitute.org/the-interpreter/transformative-potential-big-data>
5. https://static1.squarespace.com/static/5e9ce713321491043ea045ef/t/602c7dc03e491e609530bb1/1613528512980/Recommendations_Privacy_Act_2021.pdf
6. <https://hbr.org/2020/05/buying-consumer-data-tread-carefully>
7. <https://www.forbes.com/sites/kalevleataru/2018/12/15/what-does-it-mean-for-social-media-platforms-to-sell-our-data/?sh=270ea1e82d6c>
8. <https://www.cigionline.org/articles/data-governances-new-clothes/>



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Project Management for Engineers



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Prepare to take the next step in your professional journey. This certificate program will equip you to manage engineering projects from design to completion. Taught by engineering and project management experts Darya Duma, P.Eng., PMP and Tim Dunn, B.Eng., PMP, this hands-on course prepares participants to plan and manage the development of engineering products, lead technical teams, and communicate with project managers and clients.

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Dates:
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Price:
\$1,975

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Emerging technologies are disrupting the workforce on a historic scale, and engineers must adapt to this changing landscape. This eight-week course addresses the impact of information technology on the workforce and helps you develop a custom digital transformation plan for your organization.

If you influence, lead, or practice digital transformation in your workplace, this course provides a valuable opportunity to develop your skills, enhance your digital literacy, and build a compelling case for your business to implement new digital strategies.

Reports, Proposals, and Communications for Engineers



Dates:
Tuesdays
April 18 and May 2, 2023

Price:
\$679

ONLINE

Join us April 18 and May 2 for two 3-hour sessions. This curriculum, developed specifically for engineers, pairs the experiences of STEM professionals with knowledge from the publishing industry. Class sessions will outline the essentials of strong engineering reports, how to review and edit your team's work, and how to get results with your writing. Participants will submit a final project and receive personalized feedback from the instructor.

The course is delivered as an engaging, interactive, hands-on online seminar. Bring your pen! You'll use it.

Writing that Sells: Technical Proposals and Pitches



Dates:
On-Demand

Price:
\$225

ONLINE

Learn how to set your proposal apart. This program equips you to deliver impressive proposals, build strong relationships and win over potential clients. Developed for working professionals, the course lets you learn independently and provides opportunities to interact with your instructor through discussion boards and assignments.



JOURNEY TO P.ENG.

ospe.on.ca/peng

PE301 - Preparing Your PEO Experience Record

Dates:

April 14, 2023 (Friday)
June 16, 2023 (Friday)
September 23, 2023 (Saturday)
November 17, 2023 (Friday)

Price:

\$195

ONLINE

This one-day interactive session provides participants with the knowledge and skills to develop their Experience Record, which is an absolute requirement for P.Eng. licensing in Ontario. It introduces the five criteria by which PEO assesses experience, outlines a six-step process for completing your experience record, and equips you to effectively communicate your “engineering stories.”

As a follow-up to the course, participants are invited to discuss their Experience Record content in a follow-up coaching conference call three weeks after the workshop. Optional individual programs will also be made available.

Preparatory Course for the National Professional Practice Exam (NPPE)

Dates:

Tuesdays
April 11 – May 9, 2023
July 25 – August 29, 2023
September 26 – October 24, 2023

Price:

\$350

ONLINE

OSPE's most popular course equips you to pass PEO's National Professional Practice Exam (NPPE). Taught by an experienced instructor, this course prepares students for the topics covered in the exam and includes a detailed review of sample exam questions. Students also enjoy on-demand access to pre-recorded prep videos.

This course is backed by the OSPE Guarantee: if you do not pass the exam on your first attempt after taking the NPPE prep course, you can retake the course within one year at no cost.

Upcoming Examination Dates:

April 3-5, 2023
June 5-7, 2023
September 11-13, 2023
November 6-8, 2023

THOUGHT LEADERSHIP THURSDAYS



EVERY THURSDAY
(12:00 – 1:00 PM)



Join leading experts for one-hour webinars on current engineering topics. Registration is **free** for OSPE members, and guests can count attendance toward their continuing professional development requirements.

- MAR. 16** Document Reliability & Digital Signature as a Key Enabler of Digital Transformation
- MAR. 23** Fiber Optics Technology
- MAR. 30** Safety and Human Factors in Engineering Design
- APR. 13** Hands-on Training: Digital Signature Software for PEO-Licensed Professionals
- APR. 20** TBD
- APR. 27** Using Indoor Air Quality to Protect from Airborne Diseases

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OSPE Podcast

Engineering the Future

Hosted by OSPE Board member and engineer Jerome James, P.Eng., *Engineering the Future* features candid interviews with industry, government and academic professionals who are not only leaders in their field, but innovators. Jerome moderates these lively conversations, taking you on a deep dive into issues that impact the profession. Available now on all major platforms.

NOW AVAILABLE

Episode 28

Engineering Equity: A Conversation with Philip Asare

In our first episode of 2023, Jerome James speaks with Philip Asare, Assistant Professor at U of T Engineering. They discuss Philip's unique career journey, his thoughts on engineering education in Ontario, and his role as Dean's Advisor on Black Inclusivity at U of T Engineering.



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2023 Board Elections

MARCH 27 – APRIL 17

Voting for OSPE's 2023 Board of Directors election opens March 27. Eligible members will receive their ballots on the first day of voting, and results will be announced through OSPE's digital channels on April 21.

All-Candidates Virtual Town Hall

March 29 | 6:30pm

Meet your 2023 Board of Directors candidates and make an informed choice in this year's election.



REGISTRATION OPENS MARCH 13TH
ospe.on.ca/about_us/governance/board-election/

*This event is open only
to OSPE Members.*

2023 Board Elections

CANDIDATE PROFILES

The following pages contain profiles for all candidates running in this year's OSPE Board Director elections. There are 4 open positions, each for a 3-year term. The profiles are listed in alphabetical order. These profiles, along with complete details on OSPE election procedures, may also be viewed online at https://ospe.on.ca/about_us/governance/board-election/.

The slate of candidates presented has been approved by the OSPE Nominations Committee and the OSPE Board of Directors.

All biographical information was prepared and submitted by the candidates. All candidate statements are the opinions of the candidates and do not necessarily reflect the opinions of OSPE. For more information on OSPE, please visit www.ospe.on.ca or call 416-223-9961 or 1-866-763-1654.

Online voting polls will open on Monday, March 27, 2023, and will close at 11:59 p.m. on Monday, April 17, 2023.



Nicholas Burgwin, P.Eng.



EMPLOYER AND POSITION

Toronto Metropolitan University, Manager, Innovation & Commercialization

EDUCATION

MAsc., Electrical Engineering – Ryerson University – 2016

BASc., Electrical Engineering – University of Toronto – June 2010

EMPLOYMENT HISTORY

| | |
|----------------|--|
| 2022 – Present | Toronto Metropolitan University, Manager, Innovation & Commercialization |
| 2015 – Present | University of Toronto, Administrator for ECE 4th Year Design Course (ECE496) |
| 2016 – 2022 | Fibos Inc., Co-Founder and CEO |
| 2014 – 2016 | Ryerson University, Graduate Assistant |
| 2013 – 2016 | NBCircuits, Part-Time - Owner, Electronics Design Engineer |
| 2013 – 2014 | Advanced Test & Automation, R&D Electrical Technical Lead |
| 2012 – 2013 | L-3 Wescam, Electrical Hardware Engineer |
| 2010 – 2012 | mySpark Technologies, Electrical Hardware Engineer |

ACTIVITIES IN ADVOCACY ORGANIZATIONS

PEO East Toronto Chapter Board Member, Treasurer

YEARS OF REGISTRATION WITH PROFESSION

Ontario Professional Engineer since May 2015

PROFESSIONAL AFFILIATIONS

Administrator for ECE496 (Design Course) at the University of Toronto – 7th year

COMMUNITY SERVICE

SDTC Seed Fund Jury member (2 times)

Vex Robotics – Design Judge (5 events)

Formula Bharat – Design Judge (4 events, held in January in India each year)

Founder of Formula North (now Formula SAE North) – Director for 8 years

CONFERENCE OR TECHNICAL PAPERS

Many different technical and business presentations associated with optical measurements and the technology developed at Fibos. A few notable events include Photonics North, PIWG Technical Conference, Western Regional Strain Gauge Committee, Sensors Expo, Automotive Testing Expo, Shenzhen pitch competition.

CANDIDATE STATEMENT

Nicholas graduated from the University of Toronto in 2010 as an Electrical Engineer and went straight into industry. Throughout his time in industry, he worked on a number of sensor applications and quickly began to recognize the limitations that exist with electrical solutions. A better alternative had to exist, and this was found through research being done at Ryerson University with fiber optic sensors. With a background in solving real world problems, Nicholas went back to school and completed his Master's degree at Ryerson University in August 2016, with his research focused towards developing a unique, low-cost solution that could enable the replacement of conventional electrical strain gauges. Fibos was not a success, but after operating for 6 years and employing over 36 individuals, the experience was invaluable. Nicholas has returned to Toronto Metropolitan University (formerly Ryerson) to manage the university's Intellectual Property portfolio and support researchers commercialize their technologies. Nicholas obtained his Professional Engineer certification in September 2015 and has been a strong supporter of the education of future engineers, acting as a course administrator at the University of Toronto and volunteering for a number of different events, such as VEX, and Formula North. The opportunity to continue to be involved with the OSPE Board would be an honour and in-line with the desire to educate and grow the engineering community in Ontario.

David Carnegie, P.Eng.

EMPLOYER AND POSITION

Malroz Engineering Inc., Partner/Senior Environmental Engineer

EDUCATION

B.Sc. (Hons.) Life Sciences, Queen's University (2004)
M.Sc. Chemical Engineering, Queen's University (2006)
MBA Smith School of Business, Queen's University (2014)

EMPLOYMENT HISTORY

Malroz Engineering Inc. (2006-present)
• Partner/Senior Environmental Engineer (since 2014)

ACTIVITIES IN ADVOCACY ORGANIZATIONS

- OSPE Board of Directors (2020 – present)
 - Secretary (2022 – present)
 - Board Development and Strategic Planning Committee (2021 – present)
 - Ontario Engineering Academy Steering Committee (2020 – present)
 - Audit and Finance Committee (2020 - 2022)
 - Nominations Committee (2020-2021), Chair in 2021
 - Environment Task Force, Chair (2020 – 2022)
- OSPE Representative to MECP Excess Soil Engagement Group (2016 – present)
- OSPE steering committee that published (2021) Scientific Report and Best Practices RE: Beneficial Reuse of Excess Soil in Aggregate Pits and Quarries.
- Membership Advisory Committee (2016 – 2022)
- OSPE Job Skills Course for International Educated Engineers, Guest Speaker (2016 – 2022)
- ONEIA (2018 – present)

YEARS OF REGISTRATION WITH PROFESSION

- P.Eng. (2011, Oct. – present)

OTHER PROFESSIONAL AFFILIATIONS, INCLUDING POSITIONS HELD

Community Service:

Kingston Economic Development Corporation Board of Directors (2015 – 2021)

- Treasurer/Secretary (2017)
- Treasurer/Vice-Chair (2018)
- Chair (2019 – 2020)
- Past-Chair (2021)

Queen's Smith School of Business MBA Advisory Board (2014 – present)

City of Kingston Environmental Advisory Forum (2009 – 2015)

CANDIDATE STATEMENT

It has been a privilege to serve you as an OSPE Board Director since 2020. I ask for your continued support as I seek a second term.

I remain keen to serve OSPE because it is the home of the engineering community, a place for our profession to collaborate and give voice to issues important to us and our communities. I am particularly passionate about OSPE's efforts to advance the engineers grow and prosper pillars outlined in the new (2022-2025) strategic plan; successful advancement of these pillars will complement efforts to continue building an engineering community that is inclusive, and trusted for its leadership.

In my time on the OSPE board I have served on numerous committees and working groups. This breadth of activity provides a foundational understanding of OSPE's organizational capabilities as it executes upon the new (2022-2025) strategic plan and provides some continuity of organizational governance.

With your support, I will continue to serve OSPE by drawing upon past board governance experience with my community economic development corporation, and my professional experience as an owner and leader of an Eastern Ontario headquartered geo-environmental science and engineering business.

Thank you for considering my candidacy for the OSPE Board. Regardless of who you vote for this spring, I appreciate your continued engagement as a member of the OSPE engineering community - our profession is all the better for it!



Mark Egbedeyi-Emmanuel, P.Eng.



EMPLOYER AND POSITION

EPCOR Utilities Ontario, General Manager, Natural Gas

EDUCATION

- B.Sc. (Hons) Mechanical Engineering
- Mini-MBA – University of Windsor.
- Registered Gas Distribution Professional – Gas Technology Institute.
- Certified Energy Manager – Association of Energy Engineers.
- Certified Demand Side Manager – Association of Energy Engineers.
- Applied Executive Leadership Certificate – Queens School of Business.
- Chartered Director – The Directors College & McMaster University / Degroote School of Business.
- Certified CEO – The CEO Institute / UNE Partnership in Australia.
- Leading Hybrid Team, Transformational & Charismatic Leadership – Queens School of Business.

EMPLOYMENT HISTORY

- EPCOR Utilities, Ontario Canada
- Union Gas & Enbridge Gas, Ontario Canada
- British Gas, Leeds United Kingdom
- Nigerian Gas Company, Warri, Nigeria

ACTIVITIES

Boards

- Current Board member Ontario Petroleum Institute
- Vice Chair, Oakville Chamber of Commerce
- Board member Windsor/Essex Regional Chamber of Commerce
- Board member, Windsor/Essex Multi-Cultural Council
- President to Board, Cultural Coalition of Chatham-Kent
- Board member, Victorian Order of Nurses, Chatham-Kent

Committees

- Current member of the OSPE Energy Task Force Committee
- Chair-Elect, United Way Campaign Cabinet, Elgin Middlesex
- Current member, Standard Council Committee
- Member, United Way Campaign Cabinet, Hamilton/Halton
- Chair of the OTF Grant Review Team in Halton/Peel
- Member of the Construction Safety Association of Ontario

YEARS OF REGISTRATION WITH PROFESSION

With the PEO & OSPE for 20 years

OTHER PROFESSIONAL AFFILIATIONS, INCLUDING POSITIONS HELD

- Fellow of the International Institute of Directors and Manager
- Member of Association of Energy Engineers
- Member of International Leadership Association
- Professional Engineers of Ontario
- Member of American Society of Quality

COMMUNITY SERVICE

- All listed above in my involvement within various Canadian towns I have resided in, i.e. Chatham-Kent, Windsor-Essex, Hamilton-Halton, St Thomas-Elgin

CONFERENCE OR TECHNICAL PAPER

- Working on a paper titled "Establishing A Natural Gas Utility of the Future in Ontario, with the following 6 focus area.
 - Situational Awareness, Procurement, Partnerships and Alliances, Customer Engagement and Experience, Asset Management and Optimization, Investment Planning and Optimization

CANDIDATE STATEMENT

As a professional engineer and member of OSPE, I have observed that members of the PEO don't fully understand the value proposition that OSPE offers to them, and I am committed to increasing membership within energy companies and their vendors in South Western Ontario.

Drive and enhance member value proposition to build loyalty and drive member acquisition and improve retention rates.

To assist with excellent member experience and enable member engagement.

To assist with delivering on OSPE Values and Strategic Plan Goals and execute the four strategic pillars linked to the goals.

I possess the experience in these various categories that will make me assets to serve as a board member, (i) Risk Management and Controls, (ii) Regulatory, by ensuring an organization is complying with all of the regulations and laws, (iii) Membership Association Management and Member Relations.

Bhola Ajay Giri, P.Eng.

EMPLOYER AND POSITION

MSS Machining & Fabrication Inc. (President, Founder & Operation Manager)

EDUCATION

- Bachelor of Mechanical Engineering, Guru Nanak Dev Engineering College, Ludhiana, Panjab University, India (1995)
- Post Graduate Diploma in Export Management(2001)

EMPLOYMENT HISTORY

- 2016-Present, President/Operation Manager, MSS Machining & Fabrication Inc. Canada
- 2005-2016, Manufacturing, Arkbro Industries, Mississauga, Canada
- 1995-2004, Manufacturing, H.R. International, Jalandhar, India

YEARS OF REGISTRATION WITH PROFESSION

- Ontario----Professional Engineer, PEO (2016 – Present)

OTHER PROFESSIONAL AFFILIATIONS, INCLUDING POSITIONS HELD

- Technical Specialist, OACETT (2006-2010)
- Premium Member, CWB Toronto (2015-Present)
- Professional Member, OSPE (2016-Present)
- Member AIAG (2020 – Present)

COMMUNITY SERVICE

- Malton Cricket Club, Mississauga, Mentor/ Head Coach U15, U17, U19 Team(2007-2010)
- Member, GNE Alumni association, India to support engineering Students (1995-Present)
- Teacher Assistant, EPIC Mississauga for P. Eng. Technical Course(2014)
- Mentor/Advisor, International & Newly Graduated Engineers in Ontario (2016-Present)
- Co-Op & Internship provider to Various Ontario Community colleges (2017-Present)

CANDIDATE STATEMENT

I am extremely honored to be nominated for the opportunity to serve on the OSPE board. As an Engineer with 25+ years of extensive experience in Automotive and Manufacturing industry, and significant experience as an entrepreneur and a business owner, I can offer a valuable perspective on a wide range of advocacy issues for Ontario engineers.

As an internationally trained engineer myself, I know the challenges that internationally trained engineers face in their effort to be part of the profession and with the licensure process. I have personal experience of how important it is to be engaged in the profession, to create networks and have professional affiliation. With the years of continuous professional development, technological advancement and engineering approach to the projects, I am successfully leading a well reputed manufacturing company in the North America, known as MSS Machining. The company is providing manufacturing solutions to the top Automotive and OEM Companies like GM, Flex N Gate, Borg Warner, Aircraft Appliance, and Mobile Climate Control.

I am interested in participating as a member of the Board of Director to do something meaningfully to the profession I care about. I believe OSPE is the best platform to lead, collaborate and work together with area experts and government to advocate for the whole engineering society and more recognition for our engineers in the public.

I believe my Industrial, strategic planning, business, and entrepreneurship skills will be very useful, while participating in OSPE initiatives to advocate the voice of the engineers and our society. My goal will be to promote diversity, create opportunities for engineers and engineering graduates to connect, collaborate, and contribute as they progress through their career.

Please join me in the voting for the OSPE board of director election. Thank you for your support and consideration.



Meggen Janes, M.Sc., QPRA, QPESA, P.Eng.



EMPLOYER AND POSITION

Principal at Geosyntec Consultants

EDUCATION

M.Sc., Environmental Engineering, University of Guelph, Ontario, 1995
B.A.Sc., Geological Engineering (Geotechnical option), University of Toronto, Ontario, 1989

EMPLOYMENT HISTORY

2021 to current, Principal at Geosyntec.
2017 to 2021, Director, Soil and Groundwater Management, Waterfront Toronto.
2008 to 2017, Client Service Manager, CH2M Hill (now Jacobs).
2003 to 2008, Department Manager, Earth Tech Canada Inc. (now AECOM).
2000 to 2003, Project Manager, Gartner Lee Limited.
1997 to 2000, Operations Manager, Sector Lead, Fluor Daniel GTI/Conor Pacific.

ACTIVITIES IN ADVOCACY ORGANIZATIONS

Board Member of the Canadian Brownfield Network, 2017 to 2023
Vice President, Canadian Brownfield Network, 2020 to 2022
Co-Chair of the Canadian Brownfield Network Conference, 2018 to current
Qualified Person Community of Ontario (QPCO) Steering Committee Member
Member of the Communication and Membership Committees of the Canadian Brownfield Network

YEARS OF REGISTRATION WITH PROFESSION

26 years in Ontario

COMMUNITY SERVICE

- Recipient, Canadian Brownfield Network Pillar Award: [2018 Award Announcement](#)
- STEM Lead, Palmerston Avenue Junior Public School: co-organized National Engineering Month events
- Multiple successful grant applications for community projects
- Science Fair Judge, Toronto School (2019, 2023)
- Science Fair Organizer/Participant, Waterfront Toronto (2019, 2020 and 2022)
- Community Garden Build, Christie Refugee Centre, Toronto (2020)

LECTURES AND CONFERENCE PRESENTATIONS

- Graduate Course Instructor, Toronto Metropolitan University (2012, 2014)
- Regular Guest Lecturer, Toronto Metropolitan University and University of Toronto.
- Over 25 conference or association presentations including those at Excess Soil Symposium, Society of Environmental Toxicology and Chemistry, Canadian Society for Civil Engineering, Greater Toronto Transportation Network, North American Environmental Law Network Annual Conference, Toronto Construction Association and others.
- Produced a [Micro Documentary Excess Soil](#)

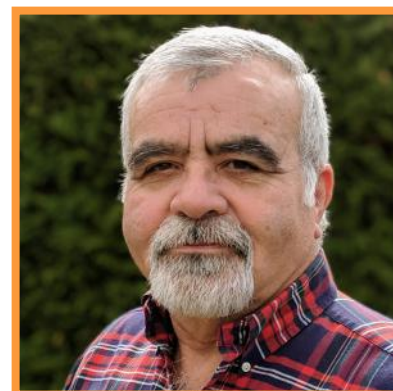
CANDIDATE STATEMENT

The engineering profession is diverse, evolving and full of opportunities for transformation. As practitioners, our focus on continuing to remove barriers, increase diversity, encourage and provide growth opportunities for young engineers will open paths for the next generation of engineers. Through work and volunteering with youth, I promote and encourage interest in the profession. **I want to serve on the Board of OSPE to support the transformation to the future of engineering.**

I work on best practices, innovation, collaborative programs, and circular economy initiatives that rely on a variety of engineering disciplines. **I want to serve on the Board of OSPE to advocate on the criticality of engineering in addressing issues and improving lives.**

I am a long-time Toronto resident. As a consulting engineer and active Board member of the Canadian Brownfield Network, I am accustomed to steering multi-disciplinary teams that connect across practice areas and hierarchies. **I want to apply my skills in relationship building, communication, and engagement to become a valuable member of the Board of OSPE.**

Changiz Sadr, P.Eng., FEC, CISSP



EMPLOYER AND POSITION

Retired

EDUCATION

- B.Sc. of Telecom Engineering from Iran
- 30+ technical and management certificates from Germany, US, and Canada

EMPLOYMENT HISTORY

- Communications Infrastructure Engineering and Cybersecurity Consultant
- University of Toronto – Correction and Completion of the Course Curriculum for PEO PPE
- Seneca College – Course Development and teaching of the OACETT PPE
- Manager Network Services/Sr. Network Architect - Symcor
- Sr. IP Network Architect – Sprint Canada
- Manager Network Planning – Optel Communications
- Network Planner/Access Engineer – Netcom Canada

ACTIVITIES IN ADVOCACY ORGANIZATIONS

- EIR Advisory Board – Engineers of Tomorrow to promote the engineering for youths and students
- Board of Directors – Engineers for the Profession (E4P) to facilitate discipline specific engineering licensing structure
- Advisory Board/Leadership Team – Space Place Canada to facilitate and coordinate building of a Planetarium for Toronto

YEARS OF REGISTRATION WITH PROFESSION

Ontario: 24 years

OTHER PROFESSIONAL AFFILIATIONS

- OSPE
 - Toronto Exchange Hub
 - Mentor
- Engineers Canada
 - Board of Directors
 - Canadian Engineering Qualifications Board
- Professional Engineers Ontario (PEO)
 - Council - East Central Region Councillor
 - Executive Committee
 - Regional Councillors Committee Chair
 - Experience Requirements Committee Chair
 - Licensing Committee vice Chair
 - Finance Committee
 - Audit Committee
 - Discipline Committee
 - Government Liaison Committee
 - Emerging Disciplines Task Force
 - Communications Infrastructure Engineering Working Group vice Chair
 - Willowdale/Thornhill Chapter
 - Chair
 - Vice-Chair
 - Government Liaison Program Committee Chair
 - Programs and Events Committee Chair
- Ontario Association of Certified Engineering Technicians and Technologists (OACETT) Council

COMMUNITY SERVICE

- Toronto South Local Immigration Partnership and Newcomer Councils
- Skills for Change and ACCES Employment – Mentor
- Canadian Society of Iranian Engineers and Architects (Mohandes)
 - Board of Trustees
 - Board of Directors
 - Vice- Chair
 - Publication Committee Chair
 - Science and Technology Committee Chair
- North York General Hospital – Foundation Board – Development Committee
- Iranian-Canadian Network – JVS Toronto - Mentor
- ICTC – Mentor

CONFERENCE OR TECHNICAL PAPERS GIVEN OR PUBLISHED

- Presentations:
 - OSPE 2022 Annual Engineering Conference – Engineering and Cybersecurity
 - Cybersecurity Protection topics
 - OSPE
 - PEO Chapters
 - APEGA
 - Global Virtual Summit – Emerging ICT Technologies
 - BrightTalk – ISC2
 - TEM2009 Conference - Telecom Environment Management Dashboard
 - CIRA Annual Conference
- Publications:
 - Enhancing the Digital Utilization: Digitalization World – Energy Central
 - Data Analytics and Intelligence: Creating Real Value – Energy Central
- Panelist:
 - Cybersecurity Q&A – Protecting Digital Infrastructure – Ontario Center for Engineering and Public Policy
 - Harmonized Sales Tax with Ontario Minister of Revenue – OSPE & PEO

CANDIDATE STATEMENT

As an immigrant engineer, my focus is on EDIB (Equity, Diversity, Inclusion, and Belonging). OSPE is doing a great job in some of the related areas, but we need to improve the existing processes and develop more engaging processes, specifically in the areas of inclusion and belonging. Together, we can make a positive change.

Caroline Wojtyla, P.Eng.



EMPLOYEE

Liberty Power, Project Engineer

EDUCATION

- Bachelor of Science in Civil Engineering, Ryerson University

EMPLOYMENT

- Project Engineer III, Liberty Power
2021 – Present
- Civil Engineer in Training (EIT)/ Assistant Project Manager, GP Joule
2019 – 2021
- Customer Success Manager/Data Analyst, Canopy Labs
2018
- Civil Engineer in Training (EIT), Black and Veatch
2016-2018
- Engineering Intern, Black and Veatch
2015
- Hydrological Engineering Lab Assistant, Ryerson University
2015

ADVOCACY ORGANIZATIONS

- Environmental Task Force, OSPE
April 2020 – December 2022
- Liaison of Government Affairs, WEAO
March 2018 - April 2019

PROFESSIONAL REGISTRATION

- Professional Engineering License, Professional Engineers of Ontario
September 2022 - Present

PROFESSIONAL AFFILIATIONS

- Core Member, Women in Business Development at Liberty Power
2022-Present
- Co-President and VP, Engineers without Borders Ryerson Chapter
2012-2016

COMMUNITY SERVICE

- Mentor, Society of Women Engineers Toronto Chapter
May 2020 – December 2022
- Volunteer Hygiene-Kit Prep, Liberty/Algonquin Recovery Project
September 2022
- Bronte Creek Run for Ukraine, Liberty Utilities
May 2022
- Volunteer Meal-Kit Prep, Spadina-Fort York Community Care
August 2020
- Fundraiser Participant (Northern Pass), Princess Margaret Foundation
August 2018
- Fundraiser Participant (Ride to Conquer Cancer), Princess Margaret Foundation
June 2016

TECHNICAL PAPERS

The Life and Afterlife of Solar Panels – OSPE Blog

<https://ospe.on.ca/advocacy/the-life-and-afterlife-of-solar-panels/>

CANDIDATE STATEMENT

I am honoured to be considered for the opportunity to serve as a Director on the OSPE Board. I believe engineers have a unique and holistic perspective on the world that allows them to advocate for government, employers, and their community.

OSPE's task forces are the pillars of the organization and I will ensure that task force leaders have the tools and resources they need to support their teams. This will increase member satisfaction and allow these advocacy initiatives to reach their full potential by amplifying their voice via the appropriate platform.

If elected, I will bring my enthusiasm and dedication to the engineering profession by positively influencing new and existing members from diverse backgrounds to help achieve the Board's objectives. I intend to achieve this by engaging with the broader OSPE community and raising OSPE's profile to university engineering groups and professional regional chapters, like Engineers without Borders.

I believe I am an ideal candidate because of my experience as an OSPE member and mentor to young engineers. By understanding young engineers' aspirations, I will help increase membership engagement and further advise on OSPE's strategic direction. My work experience constructing infrastructure has provided me with the relevant skills to work with many authorities with jurisdiction in Ontario and has given me the understanding of how policies affect varying levels of society. This experience, in combination with my passion for the engineering profession, will empower my success as a Board member.

I look forward to serving our powerful community.

Thank you for your support and consideration.

MENTORSHIP PROGRAM



EMPOWER THE ENGINEERING COMMUNITY



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MENTOR OR MENTEE TODAY!**

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PLEASE EMAIL VOLUNTEER@OSPE.ON.CA
OR VISIT BIT.LY/OSPE-MENTORSHIP-PROGRAM

National Engineering Month 2023



Each year, OSPE proudly partners with Engineers Canada to celebrate National Engineering Month (NEM) in Ontario. Founded in 1992, NEM is Canada’s largest celebration of engineering excellence. This special initiative serves to advance the engineering profession, spark an interest in the next generation of engineering professionals, and celebrate the role engineers play in society.

To celebrate NEM in Ontario, volunteers from across the province host professional development events for the engineering community. These events include student competitions, panel discussions, and skill-building workshops.

This year, OSPE’s Task Forces are hosting virtual fireside chats featuring CEO Sandro Perruzza to discuss their ongoing work and how the engineering community can get involved. The newly-formed Climate Crisis task force hosted their event on March 6, and the following events are still to come:

Research and Innovation
(with Beatrice Sze, P.Eng. – Task Force Chair)
March 13 | 12:00 – 1:00 PM

Research and innovation are vital in every discipline of engineering. OSPE’s Research and Innovation Task Force members use their expertise to support initiatives that move our province forward. Join this exciting conversation to learn about what the task force is doing and how you can get involved.

Sustainable Cities
(with Carl Bodimeade, P.Eng. – Task Force Chair)
March 20th | 12:00 – 1:00 PM

Hundreds of OSPE members work at the intersection of environment and infrastructure, building sustainable cities, improving quality of life for Ontarians and strengthening our economy. Join this engaging conversation to learn what the task force is doing and how you can get involved.

Energy (with Steve Pepper, P.Eng. – Task Force Chair)
March 27 | 12:00 – 1:00 PM

The energy sector plays a critical role in our daily lives. OSPE’s Energy Task Force members volunteer their time to research how Ontario can develop cleaner, more cost-effective electricity. Join this critical conversation to learn what the task force is doing and how you can get involved.

Register for Fireside Chats at ospe.on.ca/events

OSPE’s **Equity, Diversity and Inclusion Task Force** is also hosting a National Engineering Month Event: *Bringing Engineering into Politics*. This panel discussion will explore the journeys of several politicians who got their start in engineering. Learn how these officials transitioned from engineering to politics, how they leverage their engineering expertise in decision-making, and the importance of having engineering representation at all levels of politics.

Bringing Engineering into Politics
March 27, 2023 | 6:00 – 7:30 pm

Register at nemontario.ca/events.



Partners from industry, academia and the non-profit sector are also hosting events throughout the month of March. Highlights include the following:

March 13 - 17: OSPE at the CN Tower (In-Person)

Over March Break, OSPE is hosting a booth at the CN Tower with educational STEM activities for kids. Bring your little ones to the Tower and inspire the next generation of engineers!

March 15: Engineering the Future (Online)

hEr VOLUTION is hosting a virtual panel discussion featuring successful engineers from diverse disciplines. Following the panel, guests will be invited to join a virtual “speed networking” session and ask questions of each panelist.

March 16: A Head Start for International Students in Engineering (Online)

This session will highlight the unique challenges faced by international engineering students, and identify how these students can succeed.

March 18: Transportation Engineering Consulting Challenge (Online)

In this design-a-thon challenge, teams of competitors will be assigned a deliverable related to the in-progress Hamilton LRT. Competitors will work with real-world data and receive entry-level tutorials on relevant software. Teams will work under a tight deadline, and the winning submission will be judged by a panel of local experts.

March 21: The Transformational Power of Equity, Diversity and Inclusion (Online)

This event, led by experts from the Durham College Faculty of Science, Engineering and Information Technology, will educate guests about the importance of Equity, Diversity and Inclusion in the workplace.



March 22: The Importance of Mentors and Sponsors (Online)

Led by the WinSETT Centre, this event offers a chance for women in engineering to connect with their colleagues from across the province, reflect on their shared experiences, and provide each other encouragement and support.

March 24: Mathletics and Bridge Building Competition (In-Person)

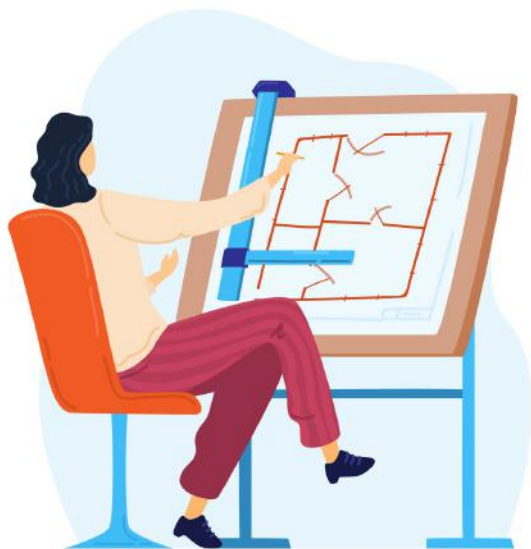
Designed for current high school students, this competition gives participants a hands-on engineering challenge and introduces them to a diverse group of local engineering professionals.

March 25: Bridging the Gap Between Inequality (In-Person)

In this session, attendees are randomly assigned boxes of building materials and tasked with building a bridge. However, different boxes contain different qualities of material – a powerful object lesson representing real-world inequalities.

March 29 - 31: STEMPowered (Online)

Hosted by Centennial College’s Biotechnology Student Society (BioSS), this 3-day virtual event is catered to middle school and high school students. Days 1 and 2 will feature guest speakers from a diverse range of STEM fields, while Day 3 will feature an interactive STEM workshop. Guests will have the chance to learn more about biotechnology and win great prizes!



Register or browse the full list of events, visit nemontario.ca/events.



MEMBER PROFILE



Bob Awharen, EIT
Intern Member
Asset Engineer / Transportation Lead

What does your job or volunteer work consist of?

My experience with the OSPE Environment Task Force and Water Resources Working Group was about making OSPE's voice heard on environmental issues and ensuring stewardship that reflects engineering values. As a member of the working group, I participated in development of initiatives, prepared white papers to submit to the provincial government and responded to provincial and federal consultations. As a Topic Lead in OSPE's Toronto Exchange Hub, my role is to oversee planning of developed initiatives.

How do you apply engineering knowledge and principles to your job or volunteer work?

At work, or for my volunteer activities, I always utilize a systematic approach to problem solving which involves basic engineering concepts like investigation, problem definition, analysis, option selection, implementation, and evaluating results. Also, I ensure that all work performed falls within the engineering code of ethics.

Why are you an OSPE member? Why do you think the work OSPE does is important?

Iron sharpens iron. Being among other engineers, interacting, contributing, and learning is a sure path to professional growth. OSPE provides this engaging environment through the strong engineering community it has built.

Joining OSPE has been a great opportunity for me to give back to society. I recognize that I am at a point where I can offer more by sharing my expertise, creating an impact in the community and making my voice heard.

Being an OSPE member has opened my eyes and broadened my perspective in many ways. I am now able to easily follow my topics of interest. As an OSPE working group ambassador, I had the opportunity to engage in topics from other working groups.

Between volunteering with the OSPE working group and the Toronto Exchange Hub, I was able to sharpen my skills by working with engineers from different backgrounds and making decisions as a team.

The key member benefits for me are the relevant webinars and workshops that are tailored to aid professional engineering development and accelerate career growth. With this knowledge, I can direct and mentor students and new graduates on the available OSPE resources to help them on their path to professional success.

What issues in the profession are most important to you?

I am very passionate about the environment. I worry about the impact of climate change on our water resources as well as the already existing threats to our water resources. The OSPE working group for water resources was involved with initiatives to support the provincial government with recommendations on policy changes that will create positive outcomes on the effort to protect our freshwater resources and make clean water available for drinking and recreation for all Ontarians. I believe OSPE is moving in the right direction with this.

What advice would you give your younger self?

My early career was focused on the oil industry and at the time, it was my comfort zone because it was what I started with. Later in my career when I started to explore other options in engineering, I began to realize that it was something I should have done long ago. Engineering is a wide profession and one piece of advice I would give my younger self is to explore more and broaden my knowledge on many more aspects of engineering.



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