Cozmin Ududec

Contact Information

LinkedIn – *Mobile:* +44 7856 754032 – *E-mail:* cozmin.ududec@gmail.com

Summary

Research leadership experience

- Co-founded a research driven startup with a mision to optimise complex decision making and reduce economic and environmental inefficiencies in electricity grids.
- Skillful at moving between and integrating multiple levels of analysis under uncertainty, and guiding a very technical set of individuals to collaborative success.
- Extensive experience in identifying, diagnosing and implementing organisational design, workflow and process changes, while bringing those impacted along for the journey.
- Excellent communication and coordination skills, and ability to build strong relationships across a fast growing organisation.
- Strong ability to develop and implement multiple research and engineering programmes and strategy, from ideation to a $80m Series B fundraise.

Technical experience

- Ph.D. in Quantum Physics.
- 10 years of applied research experience in modelling high-dimensional time series, machine learning (probabilistic models, Bayesian inference), statistics, data science, constrained optimisation, and MLOps.
- Expertise in electricity grids and market structures, regulation, and operations.
- Extensive Matlab experience, intermediate Julia, and basic Python.
- Prince2 Project Management Certification.

Professional Experience

Chief Scientist and Research Lead – Invenia Labs – Cambridge, UK
October 2015 – March 2023

- Co-founded Invenia Labs in 2015, the research wing of Invenia Technical Computing. Invenia Labs was responsible for developing and testing forecasting and decision making models for generating thousands of MWh per day to bid into 7 U.S. wholesale electricity markets, in order to improve grid efficiency and generate revenue.
- Grew the team from 2 to 30 staff and directed the full research organisation, including data scientists, machine learning researchers, power systems engineers and research software engineers.
- Led many organisational improvements: development of the research strategy; processes to prioritise and effectively plan projects; and creation of a new operating model incorporating product, project and team leads.
- Key role in daily operations and coordination of research with software engineering teams between UK and Canada.
- Supported research team members in understanding and reaching their professional development goals, and mentoring senior researchers to grow into new technical and people leadership roles.
- Maintained hands-on involvement in research projects and part time proof-of-concepts.

Co-founder and Researcher – Invenia Technical Computing – Winnipeg, Canada
2006 – October 2015

- Developed, tested and implemented time series forecasting models, optimisation and decision making algorithms. These include end-to-end neural net based models directly generating MWh to bid, and automated portfolio optimisation taking into account risk and operational constraints.
- Led the introduction of quantitative risk assessment into research workflows.
- Proposed and evaluated many new project proposals and research directions.
- Maintained an advisory role during Ph.D. (2006 – 2012).

Education

Ph.D., Physics and Astronomy, 2006 – 2012

- University of Waterloo and the Perimeter Institute for Theoretical Physics, Canada
- Thesis: *Perspectives on the Formalism of Quantum Theory*. Key result is a reconstruction of the mathematical formalism of quantum theory from intelligible first principles.

B.S., Mathematics and Physics – Joint Honours (Allen Medal), 2001 – 2006

- University of Manitoba; Winnipeg, Canada

Publications

Google Scholar Profile

I have publications in a range areas including: applied machine learning for power grid optimisation, data analysis of electricity markets, postulates characterising quantum theory, and equilibration in complex quantum systems. I also hold a patent.

Personal Interests

I have interests in areas such as machine learning, quantum information, philosophy of physics, economics, and history of technology and innovation. More practically, I've taken introductory flight lessons and like to experiment with cooking new breakfast and brunch dishes. I stay active by playing squash and tennis, and feeding squirrels in the park.