CURRICULUM VITAE

Maksym Neyra-Nesterenko

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EDUCATION

Ph.D., Applied Mathematics – Simon Fraser University May 2024—now

- Supervisor: Ben Adcock

M.Sc., Applied Mathematics – Simon Fraser University Sep 2020-Mar 2023

- Thesis title: *Unrolled NESTA: constructing stable, accurate and efficient neural networks for gradient-sparse imaging problems*
- Contributes towards research in: deep neural networks for inverse problems in imaging and optimization acceleration schemes for fast image reconstruction
- Committee: Ben Adcock, Nilima Nigam, Ozgur Yilmaz, Nadish de Silva

B.Sc., Mathematics Honours – Simon Fraser University Sep 2014-Apr 2020

TECHNICAL SKILLS

- Python, R, MATLAB, SQL, Git
- Microsoft Office, LaTeX, Power BI
- numpy, pandas, Jupyter, tensorflow, torch, scikit-learn, matplotlib, requests, selenium
- Data processing, data cleaning, data modelling, data analysis, data visualization
- Statistics and machine learning
- Technical writing, presentations, research

WORK EXPERIENCE

Economist / Analyst – Statistics Canada Jan 2025-Mar 2026

- Compiled and presented rural transportation poverty indicators with census data and road infrastructure data to model rural policy intervention, yielding a framework for Housing, Infrastructure, and Communities Canada to manage transportation funding
- Constructed tables to analyze labour flows between Indigenous and non-Indigenous communities to quantify economic development for policymakers at Indigenous Services Canada
- Collaborated with coworkers and management to write, edit, critique reports of other projects and contract letters to strengthen business relationships and communication with government clients

Data scientist – Statistics Canada May 2018-Aug 2020

- Implemented and documented OpenTabulate, a data tabulation Python program, to compile datasets for an open data portal of public Canadian infrastructure hosted on Statistics Canada's website
- Webscraped and assembled a comprehensive dataset of Canadian education facilities on for Indigenous and Northern Affairs Canada to conduct an analysis of Indigenous schools

PUBLICATIONS

Journal papers

- B. Adcock, M. Colbrook & M. Neyra-Nesterenko, *Restarts subject to approximate sharpness: a parameter-free and optimal scheme for first-order methods*. Found. Comput. Math. (2025)

- M. Neyra-Nesterenko & B. Adcock, *NESTANets: stable, accurate and efficient neural networks for analysis-sparse inverse problems*. Sampl. Theory Signal Process. Data Anal. **21**, 4 (2023)

Conference abstracts

- B. Adcock & M. Neyra-Nesterenko. Provably accurate, stable and efficient deep neural networks for compressive imaging. In *International Conference on Computational Harmonic Analysis,* volume 48. 13-17 Sep 2021.

PRESENTATIONS

Contributed talks

- *Parameter-free and optimal restart schemes for first-order methods via approximate sharpness*
  WCOM Autumn (Sep 21, 2024)
- *Unrolled NESTA: constructing stable, accurate and efficient neural networks for gradient-sparse imaging problems* – Math Grad Social Seminar (Feb 7, 2023)
- *Restart schemes: a powerful parameter-free acceleration scheme for first-order methods*
  SFU Applied Math Seminar (Nov 23, 2022)
- *Stable, accurate and efficient deep neural networks for reconstruction of gradient-sparse images*
  SIAM Pacific Northwest Conference (May 21, 2022)
- *Stable, accurate and efficient deep neural networks for gradient sparse imaging*
  SIAM Conference on Imaging Science (Mar 22, 2022)
- *Stable, accurate and efficient deep neural networks for inverse problems with analysis sparse models*
  SFU Operations Research Seminars (Feb 14, 2022)
- *Provably accurate, stable and efficient deep neural networks for compressive imaging*
  International Conference on Computational Harmonic Analysis (Sep 17, 2021)
- *Provably accurate and stable deep neural networks for imaging*
  CAIMS Annual Meeting (Jun 23, 2021)

RESEARCH INTERNSHIPS

Undergraduate Research Assistant – Simon Fraser University

- Supervised by Paul Tupper and funded by NSERC — May 2017-Aug 2017
- Supervised by Karen Yeats and funded by SFU — May 2016-Aug 2016

SCHOLARSHIPS

Graduate Travel and Research Award — Jan 2025-Apr 2025

Value: $490, received from SFU by application

Ph.D. Research Scholarship — May 2024-Apr 2025

Value: $6000, received from SFU by nomination

Special Graduate Entrance Scholarship — May 2024-Aug 2024

Value: $10000, received from SFU by nomination

Graduate Travel and Research Award May 2022-Aug 2022

Value: $1500, received from SFU and SIAM by application

NSERC Canada Graduate Scholarships Master's May 2021-Apr 2022

Value: $17500, received from NSERC by application

Peter Borwein Memorial Graduate Scholarship Jan 2022-Apr 2022

Value: $1500, received from SFU by nomination

BC Graduate Scholarship Sep 2020-Aug 2021

Value: $15000, received from SFU by nomination

NSERC Undergraduate Student Research Award May 2017-Aug 2017

Value: $4500, received from NSERC by application

VPR Undergraduate Student Research Award May 2016-Aug 2016

Value: $4500, received from SFU by application

ACADEMIC RECOGNITION

- AISTATS 2023 top reviewer (top-10% of reviewers) Feb 2023

REFEREE ACTIVITY

- SIAM Journal on Scientific Computing (SISC) Apr 2023
- International Conference on Artificial Intelligence and Statistics (AISTATS) Nov 2022

WORKSHOPS and DEVELOPMENT

PIMS-IFDS-NSF Summer School on Optimal Transport – University of WA Jun 2022

- Workshop and lectures on optimal transport, attending sessions with focus on use cases in applied mathematics and data science

PIMS Math to power Industry workshop – University of Calgary Aug 2021-Sep 2021

- Completed MITACS professional industry training and development courses for data science
- Worked with Serious Labs to present and report a project on developing real-time simulation for hydraulic systems to enable virtual training for hydraulic equipment usage

TEACHING and MENTORSHIP

Teaching assistant – Simon Fraser University

- Guided students in math workshops, tutorials, and office hours to help them learn course material
- Performed marking, invigilation, and management duties to assist course instructors
- Past courses and workshops:
  - Vector calculus (MATH252), algebra workshop Spring 2025
  - Continuous optimization (MATH309), calculus workshop Fall 2024

- Vector and complex analysis (MATH254), linear analysis (MATH419) — Summer 2024
- Continuous optimization (MATH309), algebra workshop — Fall 2022
- Ordinary differential equations (MATH260) — Summer 2022
- Algebra workshop, mathematics of data science (MATH475) — Spring 2022
- Vector calculus (MATH254), applied calculus workshop — Spring 2021
- Algebra workshop — Fall 2020
- Applied calculus workshop — Fall 2018, Spring 2018

MEMBERSHIPS

Canadian Applied and Industrial Mathematics Society (CAIMS) — Jan 2021-Dec 2022

Society for Industrial and Applied Mathematics (SIAM) — Jan 2021-Dec 2022

LICENSES and CERTIFICATIONS

First aid and CPR/AED level C – Canadian Red Cross — Jul 2023-Jul 2026

- Credential ID: 104291530