CURRICULUM VITAE Maksym Neyra-Nesterenko

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EDUCATION

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*
- Committee: Ben Adcock, Nilima Nigam, Ozgur Yilmaz, Nadish de Silva

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

- Minor in *Computing Science*
- Thesis title: *Diversities, cluster analysis, and ultrametric embeddings*
- Committee: Paul Tupper, Jonathan Jedwab

TECHNICAL SKILLS

- Linux, Windows
- Python, MATLAB, SQL, C, Git, Bash, LaTeX
- Tensorflow, Torch, Numpy, Pandas, Spark, Scikit-learn, NetworkX, Jupyter
- Machine learning and statistics
- Data analysis, visualization and cleaning
- Optimization theory and algorithms
- Technical writing, presentations and research

RESEARCH ASSISTANTSHIPS

Undergraduate Research Assistant – Simon Fraser University

- Research project supervised by Paul Tupper and funded by NSERC — May-Aug 2017
- Research project supervised by Karen Yeats and funded by SFU — May-Aug 2016

WORK EXPERIENCE

Data scientist – Statistics Canada — Oct 2019-Aug 2020, Jan-Apr 2019, May-Aug 2018

- Designed and implemented OpenTabulate, a data pipeline command line tool
- Assembled datasets for Canadian health and education facility microdata

PUBLICATIONS

Journal papers

- 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.

Preprints

- B. Adcock, M. Colbrook & M. Neyra-Nesterenko, *Restarts subject to approximate sharpness: a parameter-free and optimal scheme for first-order methods.* arXiv:2301.02268.

PRESENTATIONS

Contributed talks

- *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)

AWARDS

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

Value: $17500, received from NSERC by application

Peter Borwein Memorial Graduate Scholarship Jan-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-Aug 2017

Value: $4500, received from NSERC by application

VPR Undergraduate Student Research Award May-Aug 2016

Value: $4500, received from SFU by application

RECOGNITION

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

REFEREE ACTIVITY

- SIAM Journal on Scientific Computing (SISC) — Spring 2023
- International Conference on Artificial Intelligence and Statistics (AISTATS) — Fall 2022

WORKSHOPS and DEVELOPMENT

PIMS-IFDS-NSF Summer School on Optimal Transport – University of WA — Jun 20-Jul 1, 2022

- Workshop and lectures on optimal transport, with numerous researchers presenting their work in the area

PIMS Math to power Industry workshop – University of Calgary — Aug 3-27, 2021

- Completed MITACS courses in communication and team building
- Presentation and report on Serious Labs project of developing real-time simulation for hydraulic systems

TEACHING and MENTORSHIP

Teaching assistant – Simon Fraser University

- Advised and guided students in math workshop and tutorials
- Performed marking, invigilation, and management duties
- Past courses and workshops:
  - Continuous optimization, algebra workshop — Fall 2022
  - Ordinary differential equations — Summer 2022
  - Algebra workshop, mathematics of data science — Spring 2022
  - Vector calculus, applied calculus workshop — Spring 2021
  - Algebra workshop — Fall 2020
  - Applied calculus workshop — Fall & 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