Ivan Puhachov

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I am a PhD-student working on geometry processing and machine learning applications to process natural drawings.

Publications

- **Stability-Aware Simplification of Curve Networks** — SIGGRAPH 2022
  William Neveu, Ivan Puhachov, Bernard Thomaszewski, Mikhail Bessmeltsev — [project page] [acm]
- **Keypoint-Driven Line Drawing Vectorization via PolyVector Flow** — SIGGRAPH Asia 2021
  Ivan Puhachov, William Neveu, Edward Chien, Mikhail Bessmeltsev — [project page] [acm]

Education

- **Université de Montréal** — Montreal, Canada
  PhD in Computer Science, DIRO, LIGUM — Sept 2019 - 2024 (expected)
  Research supervisor: Mikhail Bessmeltsev
- **University of L'Aquila & Kharkiv National University** — L'Aquila, Italy
  MSc (cum laude) in Mathematical Engineering; GPA: 3.93 / 4.0 — Sept 2017 - June 2019
  Joint MSc Programme Intermaths
  Thesis: "Catacaustics of surfaces" (advisor: Alexander L. Yampolsky)
- **V.N. Karazin Kharkiv National University** — Kharkiv, Ukraine
  BSc in Mathematics, School of Mathematics and Informatics, Geometry; GPA 3.66 / 4.0 — Sept 2013 - June 2017
  Thesis: "Caustics of curves and surfaces in space" (advisor: Alexander L. Yampolsky)

Skills Summary

Languages: Python, C++, bash, Matlab
Frameworks: PyTorch, NumPy, SciPy, CGAL, libigl, Eigen
Tools: Blender, git, Ubuntu, Blender scripting, Adobe Illustrator scripting

Experience

- **Research Engineering Intern** — Montreal, Canada
  Quantum Technology Recruiting Inc. on assignment with Huawei Canada — Oct 2021 - Present
  - **Currently**: Research project to submit
- **Machine Learning Research Intern** — Kharkiv, Ukraine
  MobiDev — Feb 2019 - Aug 2019
  - **Bio-verification system**: Image quality assesment system; fine-tuning face verification system
  - **Object detection and tracking**: PoC for multiple object tracking
  - **Sales forecast**: Time-series analysis

Activities

- **Teaching Assistant, IFT 6113** *"Geometric Modeling and Shape Analysis"* — Fall 2022, 2021, 2020
  Homework code templates, assessment, face-to-face evaluation, tech support, forum moderation — [course page]
- **Project IFT 6756** *"Game Theory and Machine Learning"* — Spring 2021
  Trained a GAN models to generate vector images, short comparison with regular raster GANs — [project page]
- **Project IFT 6010** *"Modern Natural Language Processing"* — Spring 2021
  Recurrent Neural Network with attention to generate simple drawings — [project page]

Honors and Awards

- PhD Excellence Scholarship, DIRO, UdéM – April 2021
- PhD Excellence Scholarship, DIRO, UdéM – April 2020