

Hongrui Guo

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🌐 StevenGuo42

EDUCATION

Nipissing University, ON, Canada

09/2017 – Present

- **BSc Honours Specialization in Computer Science** Overall GPA: 3.55/4.00
- **Minor in Physics** 3rd Year GPA: 3.73/4.00
- **Certificate in Game Design and Development** Class Rank in CS Class of 2021: 1st out of 7
- Specialized in Machine Learning, Optimization, and Interdisciplinarity Expected: 06/2021

WORK AND RESEARCH EXPERIENCE

Jiangsu Feiliks International Logistics Inc., Jiangsu, China

Intern Programmer

06/2018 – 08/2018

- Front-end, SQL database, and C# GUI application development

Nipissing University, ON, Canada

Research Assistant

10/2018 – 04/2020

- Multi-agent simulation and agent-oriented programming in Java and AnyLogic
- E-CARGO model (focused on Group Role Assignment (GRA)) and its applications
- Multi-objective optimization for GRA
- Extension of COSC-4896 Honours Research I project

Research Assistant

10/2020 – Present

- Machine learning optimization of kinematic variables as a predictor of dynamic stability
- Machine learning on genome prediction with k-mer embedded vectors
- Extension of COSC-4897 Honours Research II project

OTHER RESEARCH EXPERIENCE AND COURSE PROJECTS

COSC-3997 **Senior Practicum** (Individualized Study Course)

05/2019 – 08/2019

- Introduction to Machine Learning
- Signal processing and feature extraction on ECG signals
- Color mapping and ECG signal clustering/classification with Self-Organizing Map (SOM)
- Mangrove identification from remote sensing images

COSC-4896 **Honours Research I** (Individualized Study Course)

09/2019 – 12/2019

- relative localization through tag detection on embedded devices
- Multi-UAV collaboration with E-CARGO model

COSC-4897 **Honours Research II** (Individualized Study Course)

01/2020 – 08/2020

- Multivariate time series classification
- Lower-limb movement classification from multi-channel EMG signals

- Particle swarm optimization with (compactly supported, cubic, etc.) radial basis functions for solving protein, genomics, and watershed models, as well as artificial neural network hyperparameter optimization

PUBLICATIONS

- H. Zhu, M. Yang and H. Guo, " Compare Collectivism with Individualism by Team Performance based on E-CARGO," in *CSCWD 2020: International Conference on Computer Supported Cooperative Work in Design, 2020, Dalian, China*. [accepted, postponed to 2021 due to COVID-19]

SCHOLARSHIP AND AWARDS

- 2018 Carl Sanders Scholarship
- 2017 Carl Sanders Scholarship
- 2017 STEM Involvement Award

OTHER ACTIVITIES

- Compute Canada user
- Lab Instructor for middle school students. Conducted weekly 3-hour electronics labs using C and Arduino (2017 – 2018)
- Team Member of FIRST® Robotics Competition Team 6162 (2016 – 2017)
- Chemistry Lab Assistant (2014 – 2016)

SKILLS

- *Programming Languages*: especially experienced in Python (5 yr.), MATLAB (2 yr.), C/C++ (3 yr.), JavaScript (2 yr.), and Java (2 yr.); comfortable with Shell, C#, SQL, LabView and BASIC.
- 3 yr. experience on *Machine Learning* and *High-Performance Computing* on SHARCNET/Compute Canada clusters (2018 – present)
- *Libraries and Tools*: Keras, TensorFlow, scikit-learn, GSL, WSL, Linux, Git, SSH, Unity, ArcGIS, SOLIDWORKS, Adobe Photoshop, Adobe Premiere Pro
- *Languages*: English – fluent, Chinese – native speaker, Latin – beginner
- *Other Skills*: basic lab skills, basic electronics/PCB fabrication/metal parts fabrication/CAD skills