Dylan M. Sandfelder

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EDUCATION

OXFORD, UNIVERSITY OF   Oxford, UK
Master of Science, Advanced Computer Science   **Aug. 2022**

MCGILL UNIVERSITY   Montréal, QC
Bachelor of Science, Honors Computer Science   **Dec. 2020**
- Minor in Mathematics
- GPA: 3.86/4.00

SKILLS

- Python, Java, C/C++, JavaScript, TypeScript, HTML/CSS, Bash, Unix/Linux
- **Web Development:**   (NodeJS, React, AngularJS, Ionic, Cordova, PHP)
- **Data Management:**   (SQL, AWS, Firebase, Git)
- **App Development:**   (Android + iOS)

LEADERSHIP AND INDUSTRY EXPERIENCE

PIRIKO (Co-Founder, CTO), Montréal, QC   **Feb. 2018 – Present**

- Created an app with a hybrid TypeScript code base for iOS and Android using Ionic
- Designed and integrated a DynamoDB database using an AWS NodeJS backend
- Negotiated a partnership with Concordia University to make our app their student study-group solution

MEDTRONIC (Software Engineering Intern), Boston, MA   **Jun. 2018 – Aug. 2018**

- Collaborated with a team of senior developers on critical product software in the field of surgical robotics written in Python, C++, and C
- Solved complicated feedback control issues using Simulink/MATLAB controllers
- Implemented automated testing code to record and playback robotic movements in real-time

MCGILL ROBOTICS (Section Leader), Montréal, QC   **Oct. 2016 – Nov. 2017**

- Led mission-critical Doppler velocity log group of the autonomous underwater vehicle team
- Implemented high-throughput sonar processing capable of analyzing large data
- Rigorous robotics testing experience at our lab in Montréal and at the International RoboSub Competition in San Diego

RESEARCH AND TEACHING EXPERIENCE

UNIVERSITY OF OXFORD (Researcher), Oxford, UK   **Jan 2022 – Present**

- Supervised by Prof. Ismail Ceylan on a master's thesis project concerning the relational inductive bias of graph neural networks
- Collaborated with other Oxford computer science researchers and conducted experiments on Oxford's ARC computing cluster

MILA (Research Intern), Montréal, QC   **May 2020 – May 2021**

- Worked under Prof. Will Hamilton at the Montréal Institute of Learning Algorithms to develop novel graph neural network frameworks using PyTorch and PyTorch Geometric
- Built and ran high-intensity graph learning models on clustered computer nodes

KOUZHU EDUCATIONAL TECHNOLOGY (Lecturer), Nanjing, China   **Jun. 2017 – Aug. 2017**

- Taught classes in China on robotic design and the principles of good software development
- Built and programmed working robots with STEM students as a teaching tool
- Received excellent official reviews from students and other participants

ROBOHACKS (Mentor), Montréal, QC   **Mar. 2017**

- Guided participants from top international universities through intensive hackathon projects
- Instructed students who eventually won the hackathon with top marks
- Assisted fellow mentors when they were not able to aid their assigned groups

AWARDS

- McGill Science Undergraduate Research Award ($7,000)   **2020**

- International RoboSub Competition Finalist   **2017**

PUBLICATIONS

- *D. Sandfelder, P. Vijayan and W. L. Hamilton, "Ego-GNNs: Exploiting Ego Structures in Graph Neural Networks," ICASSP 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021, pp. 8523-8527.*