CALEM BENDELL

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SUMMARY

Experienced in 3D programming, analysis, embedded programming, and machine learning.
Experienced in C++, Python, C#, Java, Lisp (Common Lisp / Clojure), and Javascript/Coffeescript.
Used Rust, Haskell, Lua, (T/N)ASM, and Julia for personal projects.
For 3D media, experienced in Unreal, Unity, Blender, Substance, Photoshop, Illustrator.
For analysis and machine learning, experienced in scikit, numpy, Blaze, LAPACK, Torch.

PROFESSIONAL POSITIONS

iGotchaMedia Montreal — *Feb 17 – curr* — ***AR VR Developer***
- Lead developer for AR VR division, creating products for clients including Cirque du Soleil

Neo Smart Blinds — *Sep 16 – Jan 17* — ***Embedded and Phone App Developer***
- Wrote utilities for Smart Blinds control software, integrated blinds system with multiple smart home platforms, and contributed to Neo Smart Blinds Blue app.

McGill School of Computer Science — *May 16 – Jul 16* — ***Bootcamp Games Programming Instructor***
- Wrote and delivered Java curriculum of the games stream for McGill's *Be a Computer Scientist* camp

Neo Consulting — *Aug 15 – Mar 16* — ***Phone App Development Consultant***
- Programming Neo Smart Blinds App, available on the Android and Apple marketplaces
- Work was completed in 3 contracts in NodeJS, HTML5, CSS.

Ubisoft Montreal — *May 15 – Aug 15* — ***Generalist Programming Intern***
- Programmed menus and in-game interface components for melee brawler *For Honor* in C++.

Equipmind — *Mar 14 – Feb 15* — ***Model Programmer and Hardware Prototyper***
- Developed an assessment tool to simulate energy usage in university laboratories
- Prototyped lab equipment monitoring devices
- Work was completed in 3 contracts in Python and C

McGill University — *Sep 14 – Apr 15* — ***Course Supervisor for Engineering Design***
- Supervised development of mesh networking and hierarchical database management projects for final year students in the Departments of Electrical Engineering and Software Engineering, respectively
- Joined McGill faculty in grading engineering capstone projects for 2015.

McGill School of Computer Science — *Sep 13 – Dec 14* — ***Teaching Assistant and Preparatory Lecturer***
- Teaching assistant for introduction to programming. Lecturer for preparatory tutorials for several classes including Software Systems, Hardware Systems, Algorithms 1.

RESEARCH POSITIONS

McGill Department of Physiology

Aug 16 – Dec 16 **Cook Lab: Mitigation of Simulator Sickness**

– Explored camera manipulation such as subtle modulation of depth of field to reduce simulator sickness for users of head mounted virtual reality devices. Work done in Unreal Engine 4 and Oculus SDK.

McGill Department of Physiology

Dec 15 – Jun 16 **Cook Lab: Classifying Neuronal Signals**

– Developed new neuronal signal similarity metrics and employed machine learning algorithms to classify behaviour before stimulus onset in Python. Boils down to: predict a monkey's behaviour based on neuronal activity before any stimulus is presented.

Montreal Neurological Insitute

Sep 15 – Mar 16 **Ruthazer Lab: Modelling Axonal Development**

– Developing simulations of retinal axon growth and remodelling in Python and Lisp. Built a new framework for neuronal simulations in C++.

McGill School of Computer Science

Jan 15 – May 15 **Verbrugge Lab: Unification of Physics and Networking**

– Developed algorithms in C# for unifying physics and networking engines, enabling large numbers of rigid-bodies for multiplayer games and simulations to maintain thousands of bodies with real-time physics interacting with each other over "mediocre" networks.

McGill Department of Chemistry

Sep 13 – Jan 14 **Moitissier Lab: Prediction of Point Mutation Structure**

– Designed a C++ and Python toolkit (transitioned from Scala) to simulate structures of generations of molecules with point mutations using supervised learning and clustering. Used to aid the prediction of drug efficacy and explore drug candidates.

McGill Department of Microbiology and Immuology

May 11 – Jul 13 **Murgita Lab: Drug Candidate Prediction**

– Wrote the Java core of the RAD-T predictor (citation below) that predicts active sites on proteins. Led research efforts from 07.11 to 09.12. Recruited and trained 5 students to work on the project.

EDUCATION

B.Sc. McGill University, Deans Multidisciplinary Research List, 2016

VOLUNTEERING AND PARTICIPATION

01–03.15, 01–03.16	Participant in Ubisoft Game Lab Competition
05.14 – 04.15	President, McGill Computer Science Undergraduate Society
03.15	Organizer for 2015 McGame Jam
06.13 – 12.14	Chief of Automation for netMTL green home project
12.14 – 05.15	Board Member for HackMcGill

PUBLICATIONS

BMC bioinformatics, 15(1), 1.

03.14 Bendell, C. J., Liu, S., Aumentado-Armstrong, T., Istrate, B., Cernek, P. T., Khan, S., ... & Murgita, R. A. (2014). Transient protein-protein interface prediction: datasets, features, algorithms, and the RAD-T predictor. *Highly accessed*