Rory Finnegan

Software Developer | 8+ years of experience building ML and data pipelines

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Experience

Research Software Developer | Invenia Labs *(2020-2023)*

Developed production-ready models and scientific software in line with research objectives.

- Mentored colleagues and guided long-term research initiatives
- Simplified prototyping environments resulting in lower research lead times
- Accelerated model evaluation throughput by developing a modular feature selection and transformation API
- Improved memory consumption and NAT usage to reduce AWS costs by 25-30%
- Reduced average query latency by an order of magnitude using a local caching solution

Software Developer | Invenia Technical Computing *(2016-2020)*

Developed and maintained core production data and ML platform.

- Reduced Gentoo AMI build times and EC2 stack deployment times by an order of magnitude
- Migrated the monolithic MATLAB application to a modular Julia / Python platform
- Reduced DB query execution times by an order of magnitude
- Implemented a release management process to increase CI/CD velocity and stability
- Interim team lead for 9 months

Undergraduate Research Associate | HCILab, University of Manitoba *(2012-2013)*

Developed an immersive application for visualizing and interacting with spatiotemporal data using C++ and OpenGL

Computer Programmer & Analyst | National Microbiology Lab *(2012-2012)*

Continued development of an HIV mutation analysis pipeline to aid clinicians in prescribing effective drug treatments

Skill

- **Programming** Python, Julia, SQL, Shell
- **Software** AWS, Git, Docker, Linux, PostgreSQL

Education

Master of Science | McMaster University *(2014-2016)*

Interdisciplinary neuroscience program focused on computational modelling

Bachelor of Computer Science Hons. | University of Manitoba *(2008-2013)*

Specializations in computer systems and databases

Publications

- **Finnegan, R.**, Shaw, M., & Becker, S. (2017). Restricted Boltzmann Machine Models of Hippocampal Coding and Neurogenesis. In *The Rewiring Brain: A Computational Approach to Structural Plasticity in the Adult Brain* (Chapter 21). Academic Press. https://doi.org/10.1016/B978-0-12-803784-3.00021-4/
- **Finnegan, R.** (2016). Computational Modelling of Adult Hippocampal Neurogenesis. *McMaster University Dissertations and Theses.* http://hdl.handle.net/113/
- **Finnegan, R.**, & Becker, S. (2015). Neurogenesis paradoxically decreases both pattern separation and memory interference. *Frontiers in Systems Neuroscience*, Research Topics: The Dentate Gyrus and its Local Circuits. https://doi.org/10.3389/fnsys.2015.00136/
- Ens, B., **Finnegan, R.**, & Irani, P. (2014). The personal cockpit: a spatial interface for effective task switching on head-worn displays. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '14)*, Association for Computing Machinery. https://doi.org/10.1145/2556288.2557058/