Liam McFadden

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Technical Skills

React | Typescript | Django | Python | Unity C# | PostgreSQL | Elasticsearch | MongoDB

Experience

Frontend Software Engineer — **Redwood City, California**
Codexis — **Jan. 2022 to Present**

- Lead development on a React-based LIMS web application frontend, starting from zero
- Build LIMS tools (such as a sequence alignment viewer, experimental data plotter) from scratch
- Gather requirements and feedback from scientists to develop effective UI/UX
- Integrate with a Java-based REST API
- Make and contribute to architectural decisions as the company transitions legacy desktop applications to the web

Software Engineer — **Pittsburgh, Pennsylvania**
TrademarkVision, now a part of Clarivate Analytics — **Aug. 2018 to Jun. 2020**

- Implement frontend features using TypeScript frameworks Vue.js and Angular, following an asynchronous paradigm (RxJS)
- Contribute to the team development of a single-page, dynamic Analysis Tool under a test-driven, Scrum development framework
- Lead development of a software product according to international client requirements, using JIRA for task management
- Implement features in, debug, and write tests for the web service's Python/Django REST API and middleware
- Ingest and manage trademark data in SQL, MinIO, Elasticsearch, and MongoDB databases
- Manage bare-metal and cloud Linux servers using Hetzner online portal and Ansible
- Learn from the CEO via monthly one-on-ones as the company transitions from startup to acquisition

iGEM Team Member — **Pittsburgh, Pennsylvania**
Pitt 2017 International Genetically Engineered Machine Team — **May 2017 to Dec. 2017**

- Identify and modify steps in the E. Coli chemotaxis pathway to control bacteria motility with light
- Design Dronpa-CheY fusion protein, using UCSF Chimera, to reversibly block phosphorylation site of CheY
- Engineer bacteria to express a fusion protein using techniques such as PCR, transformation, and cloning
- Verify transformation via gel electrophoresis and expression via fluorescence imaging
- Present project poster at BMES Annual Meeting 2017 and deliver presentation at iGEM Giant Jamboree
- Create animated interactive Wild West-themed website primarily based on HTML 5 Canvas

Education

Master's Degree in Computational Biomedical Engineering — **Pompeu Fabra University, Spain**
Thesis: Learning to Coarse Grain Protein-Protein Interaction with Neural Network Potentials — **Sept. 2020 to Aug. 2021**

B.Eng. in Bioengineering, B.Sc. in Neuroscience — **University of Pittsburgh, Pennsylvania**
Double major, both Cum Laude — **Aug. 2014 to Apr. 2018**

Venture for America Fellow — **Pittsburgh, Pennsylvania**
Professional development program alongside work at a startup — **Apr. 2018 to Jun. 2020**

Entrepreneurship and Innovation Management Program — **Berlin School of Economics and Law, Germany**
Theoretical and project-based study abroad program — **Jul. 2016**

Projects

WEMspace personal website -
Personal website built in Unity and React

Javascript Spiking Neural Network -
Simulation and visualization of spiking neurons, written in vanilla Javascript

Unity Spiking Neural Network -
Simulation and visualization of spiking neurons, in Unity (C# and HLSL)

Publications

Wellman, S. M., Eles, J. R., Ludwig, K. A., Seymour, J. P., Michelson, N. J., McFadden, W. E., ... & Kozai, T. D. (2017). A materials roadmap to functional neural interface design. *Advanced Functional Materials*.