

## DENE L. FARRELL

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### PROFESSIONAL EXPERIENCE

#### **Defense Digital Service, Rogue Squadron, Washington D.C.**

Data Architect

Nov 2020– Present

- Designed, developed and deployed a real-time streaming analytics platform for ingestion of and machine learning on IoT data.
- Established a cloud-based data brokering service allowing for integration of external data producers and data consumers across the DoD.
- DDS Rogue Squadron stack: typescript, Python, API Gateway, Lambda, Kinesis, S3, Snowflake, CircleCI, Data Dog, Serverless Framework, Terraform

#### **Latch, New York - Senior Manager, Data Engineering**

Sept 2019 – Nov 2020

- Managed a team of five including three data engineers, a data scientist, and a business analyst
- Delivered several cross-company services: Data Centralization and Governance, Data Ecosystem Management with Automated Analytics Job Support, Company Operational Notifications, CRM to ERP Integration, PII Anonymization, ML Pipeline Development and Deployment Framework
- Worked with a varied set of internal stakeholders while adapting to meet the data needs across Latch.
- Latch stack: Scala, Python, EKS, Lambda, Kinesis, S3, Snowflake, Looker, Airflow, Jenkins, CircleCI, Serverless Framework, Cloud Formation

#### **Capital One, New York - Principal Data Engineer**

Mar. 2019 – Sept 2019

##### ***[Card Tech Line of Business - Collections]***

- Snowflake ETL Pipelines
- Collaboration between DE and DS, Multi-Arm Bandit Deep Learning Models
- Kubernetes deployments
- Jenkins CICD
- Feature set development across diverse data sets spanning many LOBs
- Card Tech stack: Snowflake, Kubernetes, Jenkins, Python

#### **Capital One, New York - Principal Data Engineer**

June 2018 – Mar. 2019

##### ***[Card Tech Line of Business - Paribus]***

- Lead machine learning engineering in Paribus Hotels.
- Rearchitected a legacy monolith into microservices with AWS serverless services.
- Implemented extensive testing, instrumentation, and automated deployments.
- Paribus stack: Lambda, Dynamo DB, SQS, SNS, ElasticSearch, X-Ray, Jenkins, Python, NodeJS

#### **Capital One, New York - Senior Data Engineer**

May 2017 – June 2018

### **[Center For Machine Learning]**

- Technical lead for CardOnFile detections pipeline and RESTful API
- Developed and deployed supervised and unsupervised ML models for detections.
- Fully automated deployments and rehydrations for a low maintenance production system.
- Developed D3 based data visualization tool for complex categorical data.
- CardOnFile stack: EMR, Hadoop, RDS, S3, ECS, D3, Jenkins, Luigi, Ansible Tower, Python

### **Insight Data Science, New York - Data Engineering Fellow** Jan. 2017 – Mar. 2017

- Deployed Fleetingly, a taxi fleet analysis application for scalable sensing of geospatial patterns
- Implemented fleet performance analysis with live streaming and historical pattern visualization.
- Fleetingly stack: Kafka, Hadoop, Spark Streaming, Elasticsearch, Kibana, Python, Scala

### **Sloan Kettering Institute, New York - Software Engineer** June 2015 – May. 2017

- Developed image processing, computer vision tools and interface design for understanding early *Drosophila* embryo development with Matlab, Java, Python, C++
- Made advanced computational tools accessible to non-technical users with intuitive interfaces.
- Enhanced image processing capabilities in order to analyze previously unobtainable 4D data.
- Created a full 4D segmentation and movie viewing, segmentation, correction, and analysis interface.

### **Howard Hughes Medical Institute, New York - Senior Research Technician** Dec. 2008 – June 2015

- Collaborated with PhD candidates and postdoctoral fellows to formalize and develop computational approaches to quantify cell behaviors in the *Drosophila* embryo.
- Reduced man-hours required for analyzing a movie from 20hrs to 8hrs by enhancing automatic cell recognition algorithms and improving workflow automation.

## EDUCATION

### **State University of New York, Binghamton**

M.S. Systems Science 2008

B.S. Bioengineering 2006

### **Technical University of Graz, Austria**

German Language Study and Evolutionary Robotics Research 2004 – 2005

## SIDE PROJECTS

### **Gifthorse Inc, New York - Founder and Developer** June 2018 – Present

- gifthorse.shop — a fun and easy gift recommender service
- Django Web Backend, React Frontend, Scala Data Engineering and ML Backend
- Deployed to AWS on a simple tech stack (Route53, ELB, EC2 + Docker)
- Services implemented product parsing and updating, basic frontend functionality, basic recommendation functionalities

## PUBLICATIONS

**Farrell DL**, Weitz O, Magnasco M, Zallen JA. SEGGA: A toolset for rapid automated analysis of epithelial cell polarity and dynamics. *Development* 144(9), 1725-1734 (2017)

Paré AC, Vichas A, Fincher CT, Mirman Z, **Farrell DL**, Mainieri A, Zallen JA. A positional Toll receptor code directs convergent extension in *Drosophila*. *Nature* 515, 523-527 (2014).

Kasza KE, **Farrell DL**, Zallen JA. Spatiotemporal control of epithelial remodeling by regulated myosin phosphorylation. *Proceedings of the National Academy of Sciences*. 111, 11732-11737 (2014).

Tamada M, **Farrell DL**, Zallen JA. Abl regulates planar polarized junctional dynamics through  $\beta$ -catenin tyrosine phosphorylation. *Developmental Cell* 22, 309-319 (2012).

Sayama H, **Farrell D**, Dionne SD. The effects of mental model formation on group decision making: An agent-based simulation. *Complexity* 16, 49-57 (2011).

Simoes SD, Blankenship JT, Weitz O, **Farrell DL**, Tamada M, Fernandez-Gonzalez R, Zallen JA. Rho-kinase directs Bazooka/Par-3 planar polarity during *Drosophila* axis elongation. *Developmental Cell* 19, 377-388 (2010).

**Farrell D**, Hubler A, Brewer J, Hubler I. Acceleration beyond the wave speed in dissipative wave-particle systems. *Complexity* 15, 8-11 (2010). DOI: 10.1002/cplx.20321.

**Farrell D**, Sayama H, Dionne SD, Yammarino FJ, Wilson DS. Evolutionary Perspective on Group Decision Making. Submitted to International Conference of Complex Systems (2007).

Dionne SD, Sayama H, **Farrell D**, Yammarino FJ, Wilson DS, Federman J., Carroll E., Gause D. Evolutionary perspective on group decision making: A within- and between-groups simulation, presented as a talk and paper at the Annual Meeting of the Academy of Management (2007).

Eldakar OT, **Farrell DL**, Wilson DS, Selfish punishment: Altruism can be maintained by competition among cheaters. *Journal of Theoretical Biology* 249, 198-205 (2007).