Gary Tyree

Email: gatyree1@gmail.com

Education:

University of California, San Diego
Master of Engineering in Bioengineering

The University of Arizona
Bachelor of Science in Biomedical Engineering
Minors: Molecular/Cellular Biology and Biochemistry

Employment History:

Shoreline Biosciences – Data Engineer   *September 2022 – March 2024*

- Led the planning and implementation of a data strategy that would enable innovation in cell therapies
- Constructed a data lake in AWS and transferred legacy data inside to break down siloes
- Utilized Docker containers to standardize data pipelines and reduce technical debt for future engineers
- Analyzed multivariate data as needed using SAS JMP and Python to assist in making key process decisions
- Trained and deployed RNN, CNN, and SARIMA models for Process Development and MSAT projects. Utilized the PyTorch, SciKit-Learn, and statsmodels packages to train the models, then Python, Docker, and AWS to deploy them.
- Developed KPI dashboards using SQL, Tableau, and Plotly Dash for the executive team and department leaders

Beckman Coulter - Process Development Scientist II   *March 2021 – September 2022*

- Created custom formulations for development of novel biochemical products
- Analyzed reagent behaviors with clinical analyzers, spectrophotometers, and enzyme-linked assays
- Performed investigations on multiple CAPA's to solve observed or possible nonconformities
- Broad experience creating and updating technical documentation for product development
- Supported the update of products for complying with American and European regulatory bodies

Thermofisher Scientific - Scientist I, Cell Biology   *August 2018 – March 2021*

- Planned and performed experiments for development of the electroporation products Neon NxT and Xenon
- Extensive experience with statistical analysis and Design of Experiments in JMP/SAS
- Culture, gene-editing, and liquid-handling experience with several mammalian cell types (primary cells and cell lines)
- Designed and utilized flow cytometry protocols to analyze varied cell populations
- Headed customer-facing project for CAR-T application development using electroporation, AAV, and LV datasets

Harvard University - Systems Biology Intern   *June 2017 - August 2017*

Project: Synthetic Transcription Factor Cooperativity Analysis
PI: Dr. Jeremy Gunawardena
- Adapted an existing Differential Equations model to determine cooperativity values of synthetic transcription factors

NASA - Space Grant Intern   *August 2015- July 2016*

Project: Exploring the Genetic Basis of Cellular Differentiation
PI: Dr. Richard Michod
- Inspected the effect of *reg* cluster genes' involvement in cellular differentiation among a closely related group of algae species that expressed varied levels of differentiation

Harvard University - Church Lab Summer Intern   *June 2015 - August 2015*

Project: Radical Recoding of E.Coli
PI: Dr. George Church
- Complete redesign of E.Coli genome by replacing 70,922 codons with synonymous codons
- Published work in *Science*

Projects:

UA Engineering Senior Design Project   *August 2015 – May 2016*

>   Project: Nasogastric Tube Placement Verification System for at-home use
>   Sponsor: Xeridiem Medical Devices
>   - Tackled unmet need in clinical setting with novel design for nasogastric tube sensor
>   - Designed easy-to-use verification system that would mitigate need for medical professional
>   - Conducted prototype testing using DOE then statistically analyzed results to further optimize design
>   - Won 2 awards at Engineering Senior Design Day for our project
>   - Filed 2 provisional patents for our team's design so Xeridiem could continue development

Publications:

Ostrov, Nili, et al. "Design, Synthesis, and Testing toward a 57-Codon Genome." *Science*, vol. 353, no. 6301, Aug. 2016, pp. 819–22. *science.sciencemag.org*, doi:10.1126/science.aaf3639.

Patents:

US 62/305,700, Naso-Orogastric Tube Placement Verification System for At-Home and Hospital Use

US 62/254,399, Naso-Orogastric Tube Placement Verification System for At-Home and Hospital Use

Recognitions:

- University of Arizona Engineering Design Day Most Innovative Design (May 2016)

- University of Arizona Engineering Design Day Best Presentation (May 2016)

- Arizona Board of Regent's High Honors Tuition Scholarship (August 2012 - May 2016)

- Dean's List

- National Merit Scholar Semifinalist (April 2012)