Ryan Fritz

(336) 676-3994 | fritzryan05@gmail.com| Raleigh, NC| www.linkedin.com/in/ryan-fritz-9212b9187

OBJECTIVE

Secure a position as a research assistant in a cognitive neuroscience lab, where I can leverage my passion for computational methods and neuroimaging to advance our understanding of neurological disorders.

EDUCATION

North Carolina State University, Raleigh, NC Aug 2018 - May 2022
BS, Chemical Engineering, Minor: Biological Sciences; GPA: 3.7/4.0 Minor GPA: 4.0/4.0
Relevant Coursework: Neurobiology, Biochemistry, Endocrinology, Introduction to Java, Analytical Chemistry, Neuroscience Research I and II

EXPERIENCE

Ghashghaei Lab, Raleigh, NC
Undergraduate Research Volunteer Jan 2020 – Aug 2021

- Performed various biological research analytical methods such as PCR genotyping, agarose gel-electrophoresis, immunohistochemistry, and other work utilizing common neuroimaging techniques
- Assisted with laboratory techniques and data analytics to systematically breakdown the interaction between microglia and macrophage cells within the lateral ventricle of hydrocephalic mice brains

Undergraduate Researcher Aug 2021- Mar 2022

- Collaborated with graduate student to further understand the role that the SOX9 genetic marker has in the conversion of neurogenesis to gliogenesis within the dorsal region of transgenic mice
- Assisted with mouse colony management and animal handling

Duke Raleigh Hospital, Raleigh, NC Jan 2020 – May 2022
College-student Volunteer

- Volunteered in the Same-Day surgery department, assisted with post-operative care by preparing rooms for incoming patients, providing food and drink as needed, and making rounds to the Post Anesthesia Care Unit (PACU)

Honeywell, Raleigh, NC
Technical Solutions Engineer(Team Lead) Jun 2022 – Present

- Managed Northeastern region for Honeywell Smart Energy through providing support in quotes, purchase orders, engineering and manufacturing
- Lead sales engineering team to implementing process improvement methods in SAP, Microsoft Outlook, and LOKI
    - Utilized LOKI in conjunction with SAP software system to assist manufacturing team with customer order specifications and electric metering compatibility

PROJECTS

Research Projects
Sholl Analysis

- Utilized analytical method to produce a technical report of primary, secondary, and tertiary microglia and macrophage cell processes in the striatum, ependyma, and cortex regions of transgenic mice brains

Cell Counting and Data Analysis

- Used ImageJ to count microglia, ependymal, macrophage, and neuron cells located in caudal and rostral regions of transgenic mice brains and performed respective statistical analysis

Single Cell Sequencing Cluster Analysis

- Analyzed single-cell sequencing data to categorize clusters into neuron types(astroglia, excitatory, inhibitory, ODC) based on statistical significance of up-regulated genes
    - Conducted statistical analysis utilizing R programming language to convert sequencing data into Loupe Browser

Engineering Project
Parallel Flow Microfluidic Reactor Design

- Designed and tested a 5 parallel microfluidic reactor setup to be brought into industry to meet high demand for quantum dot(semi-conductor) production
- Utilized ASPEN and MATLAB to assist with data, throughput, and technoeconomic analyses

ACTIVITIES/HONORS

National Academy of Engineering Grand Challenge Scholars Program
Selected among a large group of applicants to participate in research, projects, and high-impact experiences that support chosen engineering challenge of reverse engineering the brain

University Scholars Program
Engaged in events and experiences that provide diverse experiences in efforts to raise cultural awareness and prepare scholars for the developing world

Honeywell Bronze Award
Displayed a commitment to leadership and innovation while upholding effective communication with Honeywell Smart Energy engineering, manufacturing, and Global Customer Care teams

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SKILLS

Laboratory Skills: PCR genotyping, immunohistochemistry, gel-electrophoresis, tissue sectioning, mouse injection and perfusion, DNA isolation, neuroimaging, mouse colony management

Technical Skills: MATLAB, Python, Loupe Browser, ImageJ, ASPEN