JOELY NELSON

Data Scientist

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SUMMARY

Data scientist with over 2 years of professional experience pursuing a Master's Degree in Computer Science & Engineering. Strong background in Python, data analysis, and machine learning methods. Diligent, curious, and capable data scientist. An excellent communicator. Adaptable and highly motivated to learn new technologies with the ability to juggle multiple projects at once.

TECHNICAL SKILLS

Languages: *Python, SQL, NoSQL, Java, C, C++, Ruby, Racket, Haskell, Prolog.*
Frameworks: *GIT, Conda, Tableau, Arduino, ArcGIS.*
Python Tools: *Pandas, Jupyter Notebook, NumPy, SciPy, scikit-learn, sklearn, Matplotlib, Pytorch.*
Theory: *statistics, probability, algorithms, AI, machine learning, classification and regression modeling, clustering, deep learning.*

EDUCATION

University of Washington, Seattle, Washington

Master of Science in Computer Science & Engineering **||** *Sep 2020 - March 2022 (estimated)* **||** *GPA: 4.0*

Relevant Coursework: *Deep Learning, Computer Security, Database Internals, Capstone to Empower Underserved Populations, Interactive Data Analysis Systems (IP)*

Bachelor of Science in Computer Science **||** *Minor in Mathematics* **||** *Sep 2016 - June 2020* **||** *GPA: 3.8*

Relevant Coursework: *Machine Learning, Artificial Intelligence, Computer Vision, Data Visualization, Data Management, Data Structures and Parallelism, Software Design and Implementation, Advanced Systems and Synthetic Biology*

EXPERIENCE

R&D Graduate Data Science Intern, Sandia National Labs, Livermore CA **||** June 2021 - Sep 2021

- Researched data analytics as a means of expediting software behavior analysis.
- Defined, implemented, and evaluated multiple techniques, such as natural language processing and clustering, in Python using Jupyter Notebook, Pandas, UMAP, and NumPy to analyze process traces.
- Designed and documented experimental pipelines to test different experimental conditions.
- Successfully differentiated process traces collected under varying conditions, paving the way for applying techniques to more complex applications and environments.
- Collaborated with a small team engaged in vulnerability assessment of software to develop analysis methods.
- Created visualizations and presentations to communicate work to others at group meetings, department at all-hands meetings, and intern presentation demo days.

Graduate Data Science Researcher, Carothers Research Group, Seattle WA || Jan 2019 - Present

- Designs and deploys machine learning, modeling, and data analysis to research synthetic biology.
- Built and trained custom regression machine learning models in Python, the best of which had an R square value of 0.91, to describe chemical reaction networks of elemental CRISPR systems.
- Designed analytical python scripts to filter genetic datasets based on features such as genetic sequence or gene expression to choose a reasonable number of genes for further experimentation. One script filtered 2,000 *E. coli* genes down to 25. Another filtered over 5,000 *P. Putida* genes down to 2. In both cases this made further experimentation possible.
- Created data visualizations with Matplotlib to effectively communicate research results with scientific researchers at lab meetings, and the general public at symposiums.

Graduate Teaching Assistant, University of Washington, Seattle WA || Sep 2020 - Present

- TA for Intro to Data Science (CSE 180) Spring 21. TA for Data Programming (CSE 160) during Winter 19, Autumn 20, and Winter 21. TA for Intermediate Data Programming (CSE 163) Spring 19.
- Taught and created material to help students effectively learn fundamental data science topics including scientific Python packages, machine learning concepts, and data ethics.
- Collaborated with the course staff to document and create content for an entirely new Python data science course, the size of which was doubled from 80 to 160 after a successful first quarter.
- Mentored 2 undergraduate TAs by collaborative planning and co-leading quiz sections.

COMMUNITY OUTREACH

President, Pen and Paper Gaming Association, Seattle WA || Sep 2018 - June 2020

- Organized weekly meetings to create a welcoming, fun, and inclusive place for tabletop roleplaying games over 100 members.
- Mediated disputes between members in productive ways that prioritized de-escalation.
- Pioneered inclusivity outreach and club practices, resulting in gender ratio change from 6:1 to 1:1 (men to non-men)

Station Leader, Girl Scouts of Western Washington, Seattle WA || July 2016 - Present

- Develops and teaches a 1 hour curriculum for topics such as Girl Scout history, first aid, and STEM, first aid for over 300 k-6 children annually.
- Mentored 4 girls in high school and middle school in leadership skills, providing them the tools to lead their own section of the station.