Nathan Snyder

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EDUCATION

University of Virginia, Charlottesville, VA **Expected Graduation: May 2023**

- B.S. Computer Science & B.A. Linguistics
- Cumulative GPA: 3.93/4.00

WORK EXPERIENCE

Machine Learning Research Assistant for Dr. Dustin Keller, *University of Virginia* **January 2021 – Present**

- Engage in the full process of extracting information and making predictions from experimental particle physics data
- Investigate the data by creating custom neural network models with libraries such as TensorFlow, PyTorch, and SciPy
- Created statistical modeling and quantitative analysis tools in C and C++ for describing highly complexly related data

Software Development Engineer Intern, *Amazon Web Services, RDS Aurora* **May – August 2021**

- Reduce the cost of integration testing by thousands of dollars per month by designing and implementing a system to track all the resources created during testing and automatically delete them when they are no longer needed
- Improve the developer experience with integration testing by writing scripts that easily let developers specify how they want to handle the deletion of their resources
- Work intimately with designing schemas and optimizing queries for NoSQL databases
- Gain familiarity and experience with cloud computing and various AWS services by completing AWS Academy training

Undergraduate Teaching Assistant for Multivariable Calculus, *University of Virginia* **January – May 2020**

- Assisted the professor with teaching multivariable calculus to a class of 46 people
- Answered students' questions related to material covered in class
- Graded daily homework assignments and weekly quizzes and provided feedback for improvement

Intern, *NOVA Web Development* **June – July 2018**

- Designed and wrote Progressive Web Applications for clients in a team of eight people
- Worked extensively with service workers and web push notifications in JavaScript
- Led the testing of web applications to ensure portability across different platforms and browsers

SKILLS

- **Languages**: Java, C++, C, Python, JavaScript, Bash, Haskell, SQL
- **Libraries/Frameworks**: TensorFlow, PyTorch, NumPy, SciPy, Pandas, Scikit-learn, Matplotlib, Boost, ROOT, JDBC

PERSONAL PROJECTS

HospitalSystem (Java)

- Built an electronic communication and record-keeping system in Java that can support an entire hospital
- Created a graphical user interface using JavaFX and CSS with a login screen and portals for patients, doctors, and nurses
- Utilized locks and conditions and AES encryption to protect confidential patient data

COVID19Forecaster (Python)

- Wrote a Python script that imports COVID-19 data and predicts the number of future cases numerically and graphically
- Employed an LSTM neural network with Keras that uses the data to predict the number of cases tomorrow
- Implemented the Gauss-Newton algorithm to fit the data to multiple polynomial curves

Deep Learning Network (C, Haskell)

- Constructed an artificial neuron in Haskell that uses a perceptron algorithm to classify data
- Wrote a C program to read in data from a file and format it before sending it into the neuron
- Made the neuron be able to take in a lot of input data and then accurately classify new data

NameThatSound (JavaScript + jQuery, HTML, CSS)

- Built an interactive web app game using that helps linguists distinguish between unfamiliar sounds
- Used responsive web design concepts to optimize the appearance of the game across different screen and viewport sizes
- Designed a system that tracks user progress using cookies and adjusts the game according to the user's ability

InfList (C++)

- Created a C++ library that allows users to work with and evaluate infinite lists by using a lazy evaluation model, where only the functional components of the infinite list are stored and list values are only evaluated when they are needed.