

DAVID HEINEMAN

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EDUCATION

Georgia Institute of Technology

Expected Winter 2023

B.S. in Computer Science

GPA: 3.87, Department GPA: 4.0, Faculty Honors

Coursework: Low-level Computer Architecture, Computational Ethics, Machine Learning, Data Structures & Algorithms

Teaching Assistant for CS 3510 (Design & Analysis of Algorithms)

EXPERIENCE

Software Engineering Intern | Amazon Web Services

Summer 2022

- Developed a new feature for CloudWatch Application Insights to monitor processes running on EC2 instances
- Worked with EC2 Windows experts to identify breakpoints for customers' Microsoft SQL and .NET workloads, predict these common errors and display knowledgeable insights to reduce problem resolution time
- Onboarded existing AWS customers like Koch Industries, Moody's to monitor processes on critical Windows workloads
- **Tools:** Java, TypeScript, React.js, Kubernetes, PowerShell, Step Functions, Lambda, EC2, DynamoDB, internal tools

Research Assistant | Georgia Tech Natural Language Processing Lab

2021 - Present

- Second author on a new publication currently under review for **EMNLP 2022**, created a front-end interface to gather phrase-level simplification data for comparing the efficacy of text simplification models
- Developed server and API endpoints to evaluate phrase-level text simplification models on full webpages
- Implemented efficient lookup algorithms for large n-gram datasets using KenLM allowing for real-time predictions
- **Tools:** Flask, PostgreSQL, Python, JavaScript, AWS Sagemaker, Chrome Developer Tools

Software Engineering Intern | Patientco

Summer 2021

- Developed new approaches for predicting the likelihood of bill payments, achieved a higher performance compared to equivalent competitors' models
- Used AWS Sagemaker to productionalize models to re-train and label 500,000 unique bills daily (5% of U.S. healthcare bills)
- Prototyped a novel approach for predicting anomalies in insurance billing through modifying sequence algorithms to decrease errors in insurance adjudication for patient bills
- **Tools:** Tensorflow, Keras, Python, AWS Sagemaker, Horvord, Docker, SQL, Apache Airflow

Independent Researcher | Lassiter AP Research Cohort

2019 - 2020

- Performed a literature review on Natural Language Processing research, and implemented 12 novel essay grading models to measure their performance on a standardized dataset
- Deployed a web app through AWS allowing users to write, have essays graded, and compare performance between models
- Publicly available at davidheineman.com/comparison-aes.pdf
- **Tools:** PyTorch, Scikit-learn, Python, Django, TensorFlow

PROJECTS

Hashtag Segmentation API

- Developed a Flask server to allow real-time batch hashtag segmentation
- Created front-end website to explain hashtag segmentation and demonstrate the tool
- **Tools:** JavaScript, Flask, Tensorflow, Python

Face Alignment Tool

- Personal project, uses Python's PIL, OpenCV and open-source face recognition libraries to center a person's face in the middle of a frame and generate a timelapse of the person aging

Modern Spotify Record Player

- Wired together a Raspberry Pi, RFID reader and LED screen into a custom made wood casing and used Python's SpotiPy API library to let a user tap a Polaroid picture and automatically play a Spotify playlist

AWARDS

- Eagle Scout
- Top UserStyles.com Contributor (20,000 Installs)
- Area 9 & Atlanta Area Council Venturing Leadership Award

SKILLS

Languages: Python • C++ • TypeScript
• JavaScript • C • Git • SQL • C++

Tools: Kubernetes • PyTorch • React • PostgreSQL • Pandas • NumPy • Horvord • Flask • TensorFlow • Keras • Apache Airflow • Vue.js • Tailwind • AWS • Microsoft SQL • .NET • Ansible