

# DAVID HEINEMAN

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## EXPERIENCE

### 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
- Prototyped a novel approach for predicting anomalies in insurance billing through modifying sequence algorithms to decrease errors in patient bills
- **Tools:** *Python, Tensorflow, Keras, AWS Sagemaker, Horvorod, Docker, SQL, Apache Airflow*

### Research Assistant | Georgia Tech Natural Language Processing Lab

2020 - Present

- Developed server and API endpoints to evaluate phrase-level text simplification models on full webpages
- Working under an NSF research grant, created a front-end interface to gather phrase-level simplification data for comparing the efficacy of text simplification models
- Implemented efficient lookup algorithms for large n-gram datasets using KenLM allowing for real-time predictions
- Led bi-weekly discussions of recent NLP research
- **Tools:** *Python, Flask, Prostgres, JavaScript, Chrome Developer Tools*

### 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 essay grading models
- **Tools:** *Python, PyTorch, Scikit-learn, Django*

### Freelance Web Developer | Propria Technology

2017 - 2019

- Developed front and back-end websites for 10+ local small businesses and charities
- **Tools:** *WordPress, PHP, JavaScript*

### Platform Team Member | Fake News Detection Team, Big Data Big Impact

2021 - Present

- Created a web scraping API to efficiently get contents of news articles related to a claim, allowing a 10x increase in the amount of data which could be queried for real-time predictions

## 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:** *Python, Flask, Tensorflow, JavaScript*

### Paper: A Comparison of Automated Essay Scoring Systems

- Compared various machine learning training models against a standard Kaggle dataset to measure performance under generic circumstances
- Applied Keras, TensorFlow, Scikit-Learn and etc. tools to analyze quantifiable features and automatically grade essay sets
- Publically available at [static.heineman.me/ComparisonAES.pdf](https://static.heineman.me/ComparisonAES.pdf)

### 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

### Proselect Corporate Webpage Overhaul

- Overhauled front-end look for ProSelect's job aquisition tools, consolidated information into a minimalist, modern design and designed new marketing materials, including logo

## EDUCATION

### Georgia Institute of Technology

B.S. in Computer Science

Expected 2024

**GPA: 3.77, Department GPA: 4.0**

Faculty Honors

### Coursework

Design & Analysis of Algorithms  
Low-Level Computer Architecture  
Linear Algebra & Multivariable Calculus  
Computational Ethics

## AWARDS

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

## SKILLS

Python • SQL • JavaScript • C • Java •  
Git • AWS Sagemaker • Docker