

# SAMUEL STEVENS

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## RESEARCH INTERESTS

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Natural language processing, out-of-distribution robustness and model interpretability.

## EDUCATION

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### Ohio State University

Honors B.S. in Computer Science & Engineering  
Minor in German  
GPA: 3.94

August 2017 - May 2021 (*Predicted*)  
*Columbus, OH*

## PUBLICATIONS

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*Understanding How BERT Learns to Identify Edits*

**Samuel Stevens** and Yu Su

arXiv preprint (arXiv:2011.14039)

## RESEARCH EXPERIENCE

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### Self-Attention Interpretability in Sequence Classification

*Undegraduate Honors Research Thesis*

October 2019 - Present

*Columbus, OH*

- Fine-tuned pre-trained language models on existing sequence classification task.
- Manually created adversarial examples to probe language models' understanding of the task.
- Qualitatively analyzed trends in the attention maps of BERT, SciBERT and RoBERTa to identify differences in interpretability.
- Identified a gap in existing literature (no large-scale quantitative measurement of BERT's interpretability on sequence level classification) and (currently) designing experiments leading to a baseline result.

## SOFTWARE ENGINEERING EXPERIENCE

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### Microsoft

*Software Engineering Intern*

May 2020 - August 2020

*Seattle, WA (Remote)*

- Developed new Power BI feature to improve customers' ability to diagnose data-refresh problems.
- Authored feature spec to communicate intent and implementation details to feature stakeholders.
- Ramped up quickly in a 100 million-line C++ codebase to begin delivering value immediately.
- Demoed project to Power BI customers to demonstrate value and gain feedback.

### TicketBay

*Co-Founder and Lead Developer*

January 2018 - August 2020

*Columbus, OH*

- Collaborated with OSU students to develop a mobile app for students to buy and sell football tickets.
- Facilitated the transfer of \$165K worth of tickets between more than 7K customers.
- Led system architecture decisions in order to balance ease of development and system performance.

### GE Aviation

*Digital Technology Intern*

May 2018 - August 2018

*Cincinnati, OH*

- Built an end-to-end testing solution to automate QA testing of customer-facing web application.

- Applied agile methodology in a collaborative environment to meet specs, despite frequent changes
- Completed integration with existing deployment pipeline, leveraging existing infrastructure and leading to a net positive impact on product quality with no additional developer work.

### **The Ohio State University**

*Lead Developer*

May 2018 - November 2019

*Columbus, OH*

- Supported a professor's research by developing an online app to distribute rich media.
- Implemented agile methodology to manage 2 student developers in multiple time zones.

### **GE Aviation**

*INTERalliance Intern*

May 2017 - August 2017

*Cincinnati, OH*

- In-sourced customer-facing search, targeting \$300K in savings and 40K customers.
- Led MongoDB integration, giving customers access to previously unsearchable documents.

## **AWARDS**

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### **Hack OHI/O: Awarded Best UI/UX & People's Choice**

2020

*"A 48 hour hackathon that attracts over 800 participants annually for a full weekend of coding, building, learning, networking, and innovation"*

- Developed a web-based, voice-powered, natural language code editor to convert natural, spoken language into Python code in real time.
- Fine-tuned pretrained transformer models and developed a custom parser to convert natural language to structured code.

### **Hack OHI/O: Awarded Best Hack**

2019

- Developed an accessibility-focused text extraction app for visually impaired users.
- Used Tesseract OCR to extract text from images to provide content in a variety of accessible formats.

### **Brain Health Hack: Awarded Best Project at Large**

2018

*"Teams of future scientists, clinicians, engineers and coders compete to create tools that enable better care, more powerful research, or rather empower patients to live independent and productive lives"*

- Developed a Android and iOS Parkinson's Disease tracking app to improve effectiveness of medication.
- Used device accelerometers to measure a user's tremors to improve effectiveness of medication.

### **Hack OHI/O: Awarded Best Software Hack**

2017

- Developed an iOS social media trend aggregator in 24 hours to aggregate trending topics on Twitter and Instagram.

## **ADDITIONAL INFO**

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OSU Club Water Polo

August 2017 - Present

- Club Risk Manager

August 2020 - Present

Study abroad in Dresden, Germany

June 2019 - August 2019

- Awarded Huntington International Fellowship