Ethan C. Chau

Phone: (425) 429-8465 | E-mail: echau18@cs.uw.edu | Web: echau18.gitlab.io | LinkedIn: echau18

EDUCATION

University of Washington, Seattle, WA

M.S., Computer Science **Expected June 2021**
  GPA: 4.00
B.S. with Distinction, Computer Science (Data Science) **Sept. 2016 - June 2020**
B.A., Linguistics **Sept. 2016 - June 2020**
  Thesis: *Towards Resource-Efficient Contextual Word Representations for Parsing*
  Advisor: Noah A. Smith
  GPA: 3.97 (CS), 3.98 (Linguistics)
  Selected Coursework: Natural Language Processing, Reading and Representation in NLP (graduate), NLP Capstone, Machine Learning, Artificial Intelligence, Algorithms, Data Structures & Parallelism, Operating Systems, Computer Security

Swiss Federal Institute of Technology (ETH), Zurich, Switzerland

Exchange Student, Computer Science **Sept. 2019 - Feb. 2020**
  Selected Coursework: Advanced Machine Learning (graduate), Information Retrieval, Reliable & Interpretable AI (graduate)

ACADEMIC EXPERIENCE

Paul G. Allen School of Computer Science & Engineering, Seattle, WA

NLP Researcher **Mar. 2018 - Present**
I am investigating methods for enhancing the performance of language systems for which data is scarce and conventional methods are ineffective.

- Leading the design of informed model training methods for low-resource contextual word representation
- Developing a system for understanding and parsing nonstandard dialects of English
- Investigated methods for domain adaptation within the natural language inference task
- Advisors: Professor Noah A. Smith, Lucy H. Lin

Teaching Assistant **Jan. 2019 - Mar. 2019**
CSE 447/547M (Natural Language Processing)

- Developed and administered a new PyTorch- and AllenNLP-based text classification assignment
- Planned and led a weekly discussion section and office hours for 35 students
- Published a comprehensive, officially featured tutorial for AllenNLP (link)
- Instructor: Professor Noah A. Smith

INDUSTRY EXPERIENCE

Facebook, Seattle, WA and Menlo Park, CA

Machine Learning Engineering Intern **June 2020 - Present**
As an individual contributor to the Search-Discovery team, I am developing a high-precision system for recommending content while fine-tuning the machine learning models used to rank suggestions.

- Developing a configurable, end-to-end system for content retrieval and recommendation using C++ and Hack
- Designing efficient data-collection pipelines for search index construction
- Investigating techniques for content ranking with PyTorch neural networks

Software Engineering Intern (Backend) **June 2019 - Sept. 2019**

I built a high-performance suggestion system to underpin a suite of internal tools and designed a machine learning pipeline to improve its accuracy.

- Architected a modular, interpretable, and configurable suggestion system in Hack with a 37% higher success rate than previous versions, while maintaining an average latency of 0.5 seconds
- Engineered machine learning features that attained ~80% accuracy and F1 on the task
- Developed a multi-stage model training pipeline tailored to the application

Indeed.com, Seattle, WA

Software Engineering Intern (Backend/Data) **June 2018 - Aug. 2018**

I augmented a candidate screening platform with a natural language processing framework and developed a system that reliably integrated a machine learning model into the platform.

- Integrated an NLP library into a backend suggestion service and developed a text extraction-based heuristic, yielding 6x the number of acceptances and reaching 2x as many users as the next best suggestion source
- Architected and developed a Java-Protobuf service infrastructure for machine learning evaluation that decreased required service calls by 5x, increased logging coverage by 15x, and enabled model onboarding in 5 lines of code
- Deployed a Jenkins- and Mesos-based continuous integration system

Software Engineering Intern (Full Stack) **June 2017 - Sept. 2017**

I implemented a hotly requested feature for the My Indeed product, which involved building a brand new web interface and restructuring how user data was stored and accessed.

- Build and stylized a custom React frontend to minimize server load
- Implemented an extensible Java data storage and retrieval model
- Developed a set of REST API controllers with a test coverage of over 90%

LEADERSHIP AND COMMUNITY SERVICE

Common Ground Fellowship, Seattle, WA

Discussion Leader **Jun. 2020 - Present**
Core Team Leader **Aug. 2017 - Aug. 2018**

Common Ground Fellowship is a registered student organization at UW. As part of an 8-person leadership team, I oversaw programming for the entire academic year. I founded a weekly presentation and discussion group with an average attendance of 15 people.

- Coordinated, facilitated, and researched presentation materials for a weekly discussion group attended by 15 people
- Planned agendas and prepared study materials for weekly general meetings attended by over 40 people
- Organized weekly transportation logistics between two college campuses
- Coordinated and oversaw workshops, activities, and scheduling for a weekend-long retreat attended by 50 people

Evangelical Chinese Church of Seattle, Redmond, WA and New Taipei City, Taiwan

Taiwan Missions Youth Leader **Jan. 2016 - Sept. 2018**

The Taiwan Missions program sends American youth to a rural village in Taiwan to teach English to and provide after-school enrichment for junior high school students. As a fluent Mandarin speaker, I served as one of the head teachers for my class.

- Designed and taught daily English classes to groups of 20+ under-resourced youth
- Tutored troubled students 1-on-1, markedly increasing content retention rates
- Facilitated daily re-evaluations about content and methods with fellow teachers

AWANA Youth Leader **Sept. 2013 - May 2016**

The AWANA program engages school-aged children in activities to develop their reading skills and build character. As the most senior youth leader, I directly led a group of 20 students while also overseeing the entire 80-person age group.

- Guided elementary-age students through literacy-building activities
- Partnered with program directors to prepare session materials
- Supervised and mentored incoming youth leaders

Honors and
Awards

Winner, Outstanding Computer Science Senior Award (2020)
- Awarded to four graduating students with the most distinguished records in coursework, research, and extracurricular activities

Nominee, UW College of Arts and Sciences Dean's Award, Computer Science (2020)
- Nominated based on excellence in Computer Science coursework and research

Nominee, University of Washington President's Medal (2020)
- Nominated based on distinguished academic record (*Summa Cum Lauda*, GPA > 3.97)

Phi Beta Kappa (2018)
- Elected into a national honor society based on academic excellence (GPA > 3.83)

3rd Place, Google Games Seattle (2017)
- Placed 3rd out of nearly 50 teams in a regional collegiate problem solving competition

Leo W. and Alberta V. Thomas Utz Scholarship (2016)
- Awarded to 1 student annually for excellence in mathematics

Alpha Delta Kappa Scholarship (2016)
- Awarded to 2-3 students annually for excellence in academic endeavors and community service

Kiwanis Club of Issaquah Leadership Scholarship (2016)
- Awarded to 1 student annually for excellence in community service, leadership activities, and academic performance

Theta Xi Franklin Scholarship (2016)
- Awarded to 3 students annually for excellence in intellectual curiosity and dedication to community

Selected
Personal
Projects

Where's My Bus?

Full-Stack Web App **Mar. 2018 - Present**

Designed and deployed a lightweight transit tracking website for the Seattle Area.
Available at https://echau18.gitlab.io/obaview

- Technologies used: Python, Bottle, Azure App Service, React, Brunch

echau18.gitlab.io

Personal Portfolio **Sept. 2017 - Present**

Built a modular personal portfolio template based on a lightweight data entry format, allowing code-free website generation.
Available at https://echau18.gitlab.io

- Technologies used: React, Brunch, SCSS

EVC Charge

Windows Metro App **May 2015 - Aug. 2016**

Designed, built, and published an app to locate electric vehicle charging stations.

- Technologies used: C#, XAML

SKILLS   **Languages**
English (Native), Mandarin (Fluent), Cantonese (Proficient), Spanish (Intermediate), Standard German (Beginner)

Programming Languages
Proficient: Java, JavaScript, Python
Familiar: Bash Shell, C/C++, C#, Google Protobuf, Hack, HTML/CSS, Racket, Ruby, SCSS, SQL

Technologies
AllenNLP, Git, Mercurial, NumPy, PyTorch, React.js, Spring Framework

INTERESTS   **Academic**
Natural Language Processing, Machine Learning, Low-Resource NLP, Machine Translation, Adversarial Robustness, Syntactic Parsing

Extracurricular
Piano, Violin, Guitar, Tennis, Ultimate Frisbee