

# SICONG (SCOTT) LIU

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## EDUCATION

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**Carnegie Mellon University – School of Computer Science**

M.S. in Computational Data Science

August 2019 – Dec 2020

GPA 3.80/4.33

**University of Illinois, Urbana – Champaign**

B.S. in Electrical Engineering, Minor in Computer Science

August 2015 – May 2019

GPA 3.77/4.00

## SELECT EXPERIENCE

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**Carnegie Mellon University**

*Machine Learning Teaching Assistant*

Jan 2020 – Present

- Held regular recitation sessions and office hours to teach students in course 10-301/10-601 on topics including decision tree, KNN, perceptron, linear regression, logistic regression, neural network, generative model, HMM, reinforcement learning, SVM, K-means, PCA, boosting
- Designed and implemented multiple automation scripts that helped migrate our examination and various administrative processes online during the COVID-19 pandemic
- Graded homeworks, midterms, finals, and played an active role in the anti-cheat team and the webmaster team

**Amazon Alexa**

*Software Development Engineer Intern*

Summer 2020

- Implemented core part of customer-facing Alexa Weather business logic (multi-day weather, multi-hour weather)
- Collected user metrics and performed A/B testing to quantitatively measure feature effectiveness
- Just ask *Alexa*, *what's the weather this week?*

**VMware**

*Software Engineer Intern (MTS Intern)*

Summer 2019

- Created a system to automatically evaluate Machine Translation quality through a fine-tuned BERT model
- Designed an iterative data-cleaning process to improve training results of this model, which further pushed its accuracy to state-of-the-art levels
- Engineered a robust, efficient RESTful API to serve this model on the internal production network

**VMware**

*Software Engineer Intern (MTS Intern)*

Summer 2018

- Researched, innovated, and implemented a state-of-the-art system for bug report classification and de-duplication
- Significantly optimized multiple phases of the project by caching values that were computed repeated and grouping together similar queries, reducing the overall build and train time from 3 hours to 8 minutes
- Mentored two new interns by getting them up to speed with the project outlines, providing them with extensive programming guidance, and also assigning them suitable tasks that are within their skill level

## SELECT RESEARCH & PROJECTS

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**Capstone Project: Psychometrics**

*Project Owner*

Jan 2020 – Present

- Proposed, designed, and implemented a service that uses machine learning to extract topic-based capabilities from student assessment trials (e.g. homeworks, exams)
- In the process of deploying a graphical solution to visualize student topic-strengths on online platforms

**Academic Literature Summarization**

*Team Lead*

Fall 2020

- Reimplemented a state-of-the-art long document summarization model as proposed in 2019 by Xiao et al.
- Improved upon the existing results by correcting prior algorithmic errors, and using an improved learning rate scheduler in the training phase
- Performed visualization on model activations thresholds for summarization tasks, and proposed new a new metric (sent-ROUGE) for document summarization evaluation

## TECHNICAL SKILLS

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**Computer Languages**

Python, Java, C, C++, Objective-C

**Modules**

NumPy, PyTorch, TensorFlow, Keras, SKLearn, Matplotlib, Pandas, Flask

**Tools & Services**

Linux CLI, Vim, Git, Docker, AWS: EC2, S3, Lambda, Lightsail, ECR, ECS