

# Woo Seok Jung

St. Louis, MO

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## Education

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### Washington University in St. Louis

St. Louis, MO

PHD STUDENT IN COMPUTER SCIENCE

Sept. 2020 - present

Advisor: Dr. Michael R. Brent

### University of Puget Sound

Tacoma, WA

B.S. IN MATHEMATICS AND COMPUTER SCIENCE, GPA: 3.80/4.0

Aug. 2016 - May 2020

- Goman Book Award, May 2020
- McCormick Scholar Award, Summer 2019
- Thomas and Hilda Jack Department Scholarship, Fall 2019
- McGill Family Department Scholarship, 2018-2019
- Dean's List Award, Fall 2017, Fall 2018, Spring 2019, Spring 2020.

### DIS (study abroad)

Copenhagen, Denmark

ARTIFICIAL NEURAL NETWORKS AND DEEP LEARNING

Aug. 2019 - Dec. 2020

- Artificial Neural Networks and Deep Learning
- Artificial Intelligence
- Computational Analysis of Big Data

## Research Experience

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### ChirpGAN: A Generative Adversarial Network for Synthesizing Artificial Bird Calls

Tacoma, WA

SENIOR CAPSTONE PROJECT, SCRUM LEADER

Jan. 2020 - May 2020

- Created a data pipeline for processing 30GB+ bird vocalization audio data to GAN-ready image dataset using a wavelet transform, flood-fill algorithm, and downscaling operations.
- Implemented a GUI using PySimpleGUI to simplify user-interaction from data processing to GAN training.
- Produced promising results for three different image resolutions ( $32 \times 75$ ,  $64 \times 150$ , and  $128 \times 300$  pixels).

### McCormick Summer Research Scholar

Tacoma, WA

STUDENT RESEARCHER

May 2019 - Aug. 2019

- Applied a complex Morlet wavelet transform to raw mouse vocalization and produced visual scalogram representations.
- Implemented generative adversarial network model using progressive growing of GANs methodology.
- Produced promising results for  $16 \times 32$  and  $32 \times 64$  pixel scalogram images.

## Additional Experience

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### CJ OliveNetworks

Seoul, South Korea

DT INTERN

May 2020 - Aug. 2020

- Aid the DT team with researching and translating machine learning papers on GANs, time series forecasting, and video summarization techniques.
- Analyze viability of methods via small-batch model implementation and minimum viable product testing
- Implemented TFT architecture which saw a 12% jump in 14-day and 21-day forecasting accuracy.

## University of Puget Sound, Math/CS Department

Tacoma, WA

DEPARTMENT ASSISTANT

Jan. 2017 - May 2020

- Assisted Computer Science professors as lab TA and afternoon tutor for Introductory, Data Structures, Architectures, and Operating Systems courses.
- Assisted Math professors as grader and afternoon tutor for all-level Statistics, Calculus I & II, Multivariate Calculus, and Linear Algebra courses.

## NOVAtime Technology Inc.

Diamond Bar, CA

RESEARCH AND DEVELOPMENT INTERN

May 2015 - July 2015

- Developed a JavaScript visualization of a time clock featuring a simpler hierarchical overview of employees.
- Researched and developed Korean language localization for the time clock interface.
- Presented the projects before the company's board of directors and executives.

## Projects

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### The Face Behind the Handle

Copenhagen, Denmark

> MEDIUM ARTICLE

Dec. 2019

- Collaborated in a scrum of four to analyze patterns in Trump's tweets (atrealDonaldTrump) to predict if a tweet is from an Android or iPhone device.
- Designed neural network models and selected for best validation accuracy based on raw and balanced datasets using Keras and TensorFlow.

### Un-bottling the data

Copenhagen, Denmark

> MEDIUM ARTICLE

Dec. 2019

- Created interactive map visualizations for visual analysis of wine features using D3.js.
- Designed a LSTM network to predict a wine review description's associated review score.

### Logggregate

University of Puget Sound

GITHUB.COM/WSJUNG/LOGGREGATE

Dec. 2018

- Led a team of four in developing a study group management platform implemented using the Laravel PHP web framework.
- Defined a BCNF optimized SQLite database schema and populated it using a Python script which scraped course information from the web.

## Honors & Awards

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May 2020 **Goman Book Award,**

May 2019 **McCormick Scholar Award,**

Dec. 2019 **Thomas and Hilda Jack Department Scholarship,**

2018-2019 **McGill Family Department Scholarship,**

**Dean's List Award,** Fall 2017, Fall 2018, Spring 2019, Spring 2020

## Extracurricular University Service

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### Chair

University of Puget Sound

ACM STUDENT CHAPTER

2017 - 2019

### Secretary

University of Puget Sound

MATHEMATICS CLUB

2017 - 2018

### Webmaster

University of Puget Sound

ACM STUDENT CHAPTER

2016 - 2017

## Skills

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**Programming Languages:** Java, Python, R, C, Matlab, JavaScript, PHP

**Libraries and tools:** TensorFlow, Keras, PyTorch, Git, SSH, Flask, Laravel, MySQL, SQLite, Slack

**Foreign Languages:** Korean (professional working proficiency)

## References

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Available on request