Chanwut **Kittivorawong**

COMPUTER SCIENCE RESEARCHER · DATA SCIENCE

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Education

University of Washington, Seattle   *Washington, U.S.A*

COMBINED BACHELOR'S/MASTER'S OF COMPUTER SCIENCE AND ENGINEERING   *March 2020 - June 2021 (expected)*

- GPA: 3.8

University of Washington, Seattle   *Washington, U.S.A*

BACHELOR OF COMPUTER SCIENCE (DATA SCIENCE OPTION)   *September 2016 - March 2020*

- GPA: 3.91, Magna Cum Laude

Skills

Languages	TypeScript, Python, Java, C++, C, SQL, Vega-Lite, C#, HTML5, Vega, LaTeX
Tools/Libraries	Git, Node.js, NumPy, PyTorch, React, D3.js, Vue.js, Apache Spark, AWS, Apache Airflow, UNIX, bash, jest
General	Data Visualization, Algorithms, Data Structures, Web Programming, Software Development
	Database Management, Deep Learning/Machine Learning, OOP, Android Development

Work Experience

Summer Internship at DocuSign   *Washington, U.S.A*

SOFTWARE ENGINEERING INTERN (PRODUCT DEVELOPMENT: MANAGE & OPTIMIZE)   *June 2019 - September 2019*

- Contribute to designing and developing the Advanced Analytics Platform, an internal service in DocuSign that extracts, sanitizes, and stores usage data into the Amazon Web Service. Then, Data Scientist can query the data to perform analytics.
- The system is developed with python and spark. My contribution includes two main works. First, design AWS lambda to auto-shutdown idle EMR clusters and notebooks to prevent unnecessary cost when the service is still running but not doing any work. Second, design a spark job to keep the schema of the service's database up-to-date and to clean up unused files from failed data ingestion to prevent dirty data from being analyzed

Interactive Data Lab at University of Washington   *Washington, U.S.A*

RESEARCH ASSISTANT   *January 2018 - Present*

- Contributing to the development of Vega-Lite, a high-level grammar of interactive graphic for generating easy-to-understand visualization
- Design and implement grammar for creating error bar/error band; users can use the grammar to create error bar/band chart without having to do redundant work of combining multiple parts of error bar/band. As a result, the specification for creating error bar chart is shortened by half.
- The link to the repository can be found here: *github.com/vega/vega-lite*

Paul G. Allen Center for Computer Science & Engineering at UW   *Washington, U.S.A*

TEACHING ASSISTANT FOR SOFTWARE DESIGN & IMPLEMENTATION COURSE   *September 2019 - Present*

- Courses: (1) Software Design & Implementation (2) Data Visualization
- Teach supplementary materials to the courses' lecture in sections with small group of students. The materials include reviews of complicated concepts and guidelines to students' assignments
- Hold office hours for students, grade student's assignments, and teach student teaching assistant sections.
- In the office hour, give advices and answer to students on assignment problems and confusions of class materials.

Projects

Pleiades: Interactive Composing Tools for Vega-Lite Charts   *Washington, U.S.A*

GITHUB.COM/CHANWUTK/PLEIADES   *April 2019 - Present*

- A web-based software created using React and TypeScript that provides a graphical user interface for users to compose and layout Vega-Lite charts. Instead of configuring with Vega-Lite JSON specification to layout and compose multiple charts, user can easily interact with the graphical user interface of Pleiades to compose, layout, and edit them.
- The project has been developed in collaboration with Manesh Jhawar and Sorawee Porncharoenwase. The paper discussing the product can be found here *chanwutk.github.io/pleiades/paper.pdf* . And, the application can be found here *chanwutk.github.io/pleiades/app.html* .

Generalizable and Fast Labeling algorithm for Data Visualizations with Vega   *Washington, U.S.A*

GITHUB.COM/VEGA/VEGA-LABEL   *June 2018 - August 2018*

- Developed an algorithm to layout labels in visualization for Vega. The development includes designing the interface of the algorithm so that it is generalizable to different types of visualization and optimization for the responsiveness of interactive visualizations.
- The algorithm was implemented as a labeling tool for Vega, a grammar for building visualizations. It automates the process of laying out labels in charts, so that important information can be placed as readable labels (no collision and well-spaced)
- The algorithm can layouts efficiently up to 10,000 labels in various chart types, such as scatter, line, bar, and area chart.

Pekémon Go Weather forecast application *Bangkok, Thailand*

September 2018 - Present

- Software to predict the weather for Pokémon Go; players can plan to catch Pokémons that get benefit from the weather predicted
- Created backend software using TypeScript and Node.js to retrieve and store weather information from AccuWeather API
- Created front website to visualize weather information from backend software

One Handed Braille Keyboard at DubHacks 2019 *Washington, U.S.A*

October 2019 - October 2019

- The current touchscreen keyboard layout for visually impaired users requires two hands to operates and requires users to change hands position.
- We would like to provide an alternative for users to use their touchscreen keyboard with only one hand so that users can multitask between typing and other thing else.
- Our keyboard has 4 large buttons as we want the users to be able to type without looking. One braille alphabet is created by a combination of 3 keystrokes, which then create an English alphabet.

Courseworks

Data Structures and Parallelism	Domain Specific Languages	Natural Language Processing
Software Design & Implementation	Data Visualization (Grad. Version)	Intro. to Distributed System
Systems Programming	Computer Vision	Principles of Programming Languages
Database System Internal	Introduction to Deep Learning	
Machine Learning	Intro. to Algorithms	

Honors & Awards

2016	**16th place**, ACM Pacific Northwest Regional Programming Contest		*Seattle, Washington*
2016	**1st place**, ACM University of Washington Qualifier Round		*Seattle, Washington*
2014	**Silver Medal**, Thailand Olympiad in Informatics		*Ubon Ratchathani, Thailand*

Extracurricular Activity

Thai Students Association at University of Washington *Seattle, WA*

HEAD OF PUBLIC RELATIONS TEAM *June 2017 - June 2018*

- Coordinate with Public Relations team to spread the news about events hosted by the Thai Students Association to the public.
- Coordinated with UW Alumni Association Thailand for hosting a new students orientation session in Bangkok.