

# POOM CHANTARAPORN RAT

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## EDUCATION

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**The Pennsylvania State University** *Eberly College of Science*  
Bachelor of Science in Chemistry, GPA: 3.30, Dean's List: 4/6 semesters

University Park, PA  
August 2019 – May 2023

**Courseworks:** Computational Chemistry, Quantum Chemistry, Calculus Several Variables, Ordinary Differential Equations, CMPSC 131: Fundamentals, CMPSC 132: Data Structures, Discrete Math, Entrepreneurial Mindset.

## WORK EXPERIENCES

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### Zhou's Lab

*Undergraduate Research Assistant*

University Park, PA  
May 2021 – Aug 2021

- Integrated the compartment controlling software to a super-resolution microscope (STORM) and analyzed its images of membrane periodic skeletons (MPS) in neurons to study the development of neuronal diseases
- Trained a deep convolutional neural network (CNN) model, U-Net, using **Tensorflow** (Keras) on **Google Colab** to segmentize the area containing distinct types of MPS, achieved successful segmentation with 93.8% accuracy
- Showcased at the Chemistry Undergraduate Symposium and Thai Scholar Conference in Boston, MA.

### Thai Student Association

*Co-President*

University Park, PA  
August 2021 – May 2022

- Motivated 7 executive members and served 50 members in bonding activities and promote diversity on campus
- Raised up to \$3,500 in funding through several sponsorships to facilitate purposeful events
- Exceeded the cultural outreach by hosting a Thai cultural night on campus for over 200 students, faculties, and locals

## PROJECTS

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### Technical Analysis of Financial Data – Creator

August 2022 – Current

- Obtained financial data from exchanges' API, then processed to a time series and analyzed using the **Pandas** library
- Performed vectorized and iterative back-testing using **NumPy**, then visualized using **Matplotlib**
- Overcame the time to testify trading strategies manually and accurately accounted for the trading costs

### Cross-Platform Mobile Application – Creator

May 2019 – Jan 2020

- Developed a mobile platform for listing and selling food by targeting home cooks in Thailand
- Engineered a mobile application using **Flutter** and **Firebase** following the domain-driven design principle
- Succeeded in the integration of geolocation, chat messaging, and Google Authentication into the application

## HONORS

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### Royal Thai Scholar

2018

Fully funded scholarship with a stipend by the Royal Thai Government to study STEM-related fields from a bachelor's degree to a Ph.D. degree. Approximately 50 talented students are sponsored to study in the US yearly.

### Stephen and Patricia Benkovic Summer Research Award

2021

Undergraduate summer research opportunity with a \$3500 stipend, workshops, and a presentation provided by the Chemistry department at Penn State. Around 5 undergraduate Chemistry students are granted each summer.

## SKILLS

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**Language:** Python, Dart, HTML/CSS, JavaScript, TypeScript, Pine Script, App Script, Swift

**Tools:** Flutter, Firebase, Git, GitHub, Google Colab, Visual Studio Code

**Machine Learning Technologies:** Anaconda, CNNs, Tensorflow, Keras, Pandas, NumPy, SciPy, Matplotlib