

# Jirayu Burapacheep

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## Education

<b>Stanford University</b> , M.S. in Computer Science (AI Specialization)	2023 - 2025 (Expected)
· <b>Relevant Coursework:</b> Trustworthy Machine Learning, Machine Learning with Human Preference	
<b>University of Wisconsin-Madison</b> , B.S. in Computer Science and Data Science	GPA: 3.9
· <b>Relevant Coursework:</b> Algorithms, Operating Systems, Database Systems, Optimization, Multivariable Calculus, Information Security, Big Data, Quantum Algorithms (Graduate level)	Major GPA: 3.98 2019 - 2023

## Honors and Awards

<b>ICPC 2020 World Finals - International Collegiate Programming Contest</b> , High Honor Award	Oct 2021
· Ranked 17th in ICPC 2020 World Finals (4th place among all North American teams)	
· Ranked 1st in ICPC North Central North American Regional Contest 2020	
<b>IOI 2018 - International Olympiad in Informatics</b> , Bronze Medalist (Ranked 119/331)	Sep 2018
<b>APIO 2018 - Asia-Pacific Informatics Olympiad</b> , Silver Medalist (Ranked 24/173)	May 2018

## Work Experiences

<b>Citadel LLC</b> , Incoming Software Engineer Intern	Jun 2024 - Aug 2024
<b>Google</b> , Software Engineer Intern	May 2022 - Aug 2022
· Explored and implemented a method to improve Google Recipes Search results ranking by utilizing rating score, thumbnail image quality, and other signals (C++ and Python)	
· Improved recipe grouping with the majority of users' historical query refinements and achieved positive metrics feedback from human evaluation	
<b>Data Wow Co., Ltd.</b> , Machine Learning Engineer Intern	Jun 2021 - Aug 2021
· Reduced 83% of a human workload in ID card spam checking by switching to an AI solution to recognize similar cards and designing a backend system to self-maintain a card database (Python)	

## Academic Experiences

<b>Graduate Research Assistant</b> , Stanford NLP	Nov 2023 - Feb 2024
Co-author of a paper: ColorSwap: Color and Word Order Dataset for Multimodal Evaluation. <a href="#">Accepted to ACL 2024</a> <a href="https://arxiv.org/abs/2402.04492">https://arxiv.org/abs/2402.04492</a>	
<b>Undergraduate Research Assistant</b> , Research Group under Professor Sharon Li, UW-Madison	Sep 2021 - Sep 2023
Co-author three papers:	
1. Propose a novel test-time alignment algorithm for large language models that utilizes a reward model to steer the output to align with human preference and safety aspects. <a href="#">Accepted to ICLR 2024</a>	
2. Propose energy-based out-of-distribution detection in hyperspherical embedding space learned using contrastive learning, which outperforms current state-of-the-art methods. <a href="#">Peer-reviewing at NeurIPS 2024</a>	
3. Implement a web application to collect how GPT-3 responded to humans from different sub-populations on crucial science and social topics using Streamlit and MongoDB. <a href="#">Accepted to Scientific Reports Journal</a>	
<b>Grader for a Graduate Level CS Course</b> , Department of Computer Science, UW-Madison	Jan 2023 - May 2023
· Grade assignments for COMP SCI 880: Quantum Algorithms course at UW-Madison	
· Provide constructive feedback to students on technical work related to assignments	

## Selected Personal Projects

<b>Wisc-course-alert</b>	Apr 2021 - Apr 2023
· Request course status from the UW-Madison enrollment website via Rest API and use ReactJS and MongoDB to manage users watching list databases and notify them when the courses become available	

**Technical Skills:** C++, Python, R, Java, Javascript, PyTorch, HuggingFace, Keras, DeepSpeed, Docker, Kafka, HDFS, Spark, ReactJS, NodeJS, Flask, Celery, AWS, Google Cloud Platform, PostgreSQL, MongoDB, Elasticsearch, Streamlit.io