


Khai Loong Aw

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Education

- 2024 - **Stanford University**, *Ph.D. Computer Science*
Starting in Fall 2024.
- 2020 - 2024 **Singapore Management University**, *B.Sc. Computer Science*
GPA: 4.0/4.0.

Peer-Reviewed Publications

- 2024 Instruction-tuning Aligns LLMs to the Human Brain
K.L. Aw, S. Montariol*, B. AlKhamissi*, M. Schrimpf**, A. Bosselut**
COLM 2024
+ Accepted to *Workshop on Unifying Representations in Neural Models @ NeurIPS 2023*
+ Accepted to *Workshop on Instruction Tuning and Instruction Following @ NeurIPS 2023*
- 2023 Training language models to summarize narratives improves brain alignment
K.L. Aw, M. Toneva
ICLR 2023
+ **Top 25% Notable Paper (Spotlight)**
+ Accepted to *Workshop on Memory in Artificial and Real Intelligence @ NeurIPS 2022*
+ "Best Poster Presentation" award at *MPI-SWS Institute Retreat 2022*
- 2022 Detecting False Alarms from Automatic Static Analysis Tools
H.J. Kang, **K.L. Aw**, D. Lo
ICSE 2022
+ **Distinguished Paper Nominee** — top 19 papers, top 3% of submissions

Research Experience

- 2023 **EPFL**, *Research Intern (NeuroAI)*
• Advisors: Martin Schrimpf, Antoine Bosselut
• Investigated the similarities between: (1) LLM representations and human brain fMRI activity, and (2) LLM and human behavior. Showed that brain-LLM alignment strongly correlates with model size ($r = 0.95$) and world knowledge ($r = 0.81$). [COLM 2024]
• Contributed LLaMA and T5 models to the open-science Brain-Score Language platform
- 2022 **Max Planck Institute for Software Systems**, *Research Intern (NeuroAI)*
• Advisor: Mariya Toneva
• Showed that training language models to summarize narratives improves alignment to human brain fMRI activity. Designed an interpretability method to evaluate brain alignment across various narrative elements (e.g., characters, emotions). [ICLR top 25%]
- 2022 **Singapore Management University**, *Research Assistant (Computer Vision)*
• Advisor: Sun Qianru
• Used Self-Supervised Learning as a pre-training step to improve the performance of existing methods for the computer vision task of Semantic Segmentation
- 2021 **Software Analytics Research Group**, *Research Intern (Machine Learning)*
• Advisor: David Lo
• Used AI interpretability methods to identify data leakage issues with state-of-the-art ML models for detecting software bugs. [ICSE Distinguished Paper Nominee]

2017	National University of Singapore, Research Assistant (Engineering) <ul style="list-style-type: none"> • Advisor: Dan Zhao • Designed experiments to synthesize novel compounds for carbon capture applications
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Industry Experience

2023	GIC Singapore, NLP Project <ul style="list-style-type: none"> • Built pipeline of text-to-SQL and retrieval-augmented generation LLMs, allowing employees to use English questions to query global stock market databases
2022	GovTech Singapore, AI Engineer Intern (Computer Vision) <ul style="list-style-type: none"> • Improved the processing speed of state-of-the-art algorithms for Multi-Object Tracking, i.e., tracking the motion of multiple objects or humans within a video sequence

Presentations

2023	Conference Oral, ICLR 2023
2023	Conference Poster, ICLR 2023
2023	Talk, ML Tea @ Max Planck Institute for Software Systems
2022	Workshop Poster, Workshop on Memory in Artificial and Real Intelligence @ NeurIPS 2022
2022	Poster, Max Planck Institute for Software Systems Institute Retreat

Awards

2024	Stanford School of Engineering Fellowship
2024	IMDA Gold Medal Award - top student in B.Sc. CS graduating cohort
2022	Outstanding Second Year Student Award - top student in Year 2 of CS undergrad
2021	Outstanding First Year Student Award - top student in Year 1 of CS undergrad
2020	Global Impact Scholarship - undergrad university's top full-ride scholarship

Hackathons

2021	1st place, SMU Legal Innovation and Technology (LIT) Hackathon
2021	3rd place, SMU Ellipsis Tech Series Hackathon presented by Goldman Sachs
2021	Dentons Rodyk Access to Justice Award, SMU LIT Hackathon
2021	People's Choice Award, Asia-Pacific Legal Innovation and Technology Association
2021	Tech-cess to Justice Award, Asia-Pacific Legal Innovation and Technology Association
2021	Legal Tech Entrant Award, Asia-Pacific Legal Innovation and Technology Association
2020	Best College Hack, Hack-a-Solution international hackathon

Service

2023 - now	Reviewer <i>NeurIPS 2024</i> <i>Queer in AI Workshop @ NAACL 2024</i> <i>Workshop on Representational Alignment @ ICLR 2024</i> <i>Workshop on Unifying Representations in Neural Models @ NeurIPS 2023</i> <i>Workshop on Instruction Tuning and Instruction Following @ NeurIPS 2023</i>
2021 - 2022	Vice-President, SMU BIA Led team of 23 directors to organize Machine Learning workshops & events for a club with 1000+ students; allow non-computing students to gain hands-on ML experience

- 2020 - 2022 **Organizer, SMU BIA**
Workshop on ML Deployment
Workshop on Deep Learning in NLP
Workshop on Interview Preparation for ML and Data Engineers
Workshop on Interview Preparation for Business and Data Analysts
Other events: Data Science CTF Hackathon, Industry Mentor Sharing Session, Project Polish Program, and projects between SMU BIA and industry partners
- 2017 - 2024 **Mentor, SMU "Pay It Forward" Mentorship Program 2024**
Mentor, Data Associate Program 2023 - mentored 4 students on their ML project
Mentor, Data Associate Program 2021
Student Assistant, SMU Disability Services - assisted a student with hearing disability
Volunteer, Overseas Community Service Project *Vikasa* - taught students in Jaipur, India
Volunteer, Meet-the-People Sessions - write letters to help people get financial aid
Volunteer, Willing Hearts - help in soup kitchen