






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
- 2023 Training language models to summarize narratives improves brain alignment
K.L. Aw, M. Toneva
ICLR 2023
Top 25% Notable Paper (Spotlight)
- 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)*
• Advisor: Dan Zhao
• Designed experiments to synthesize novel compounds for carbon capture applications

Industry Experience

- 2023 **GIC Singapore, NLP Project**
• 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)**
• 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 **Best Poster Presentation, MPI-SWS Institute Retreat 2022**
- 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**
NeurIPS 2024
Queer in AI Workshop @ NAACL 2024
Workshop on Representational Alignment @ ICLR 2024
Workshop on Unifying Representations in Neural Models @ NeurIPS 2023
Workshop on Instruction Tuning and Instruction Following @ NeurIPS 2023
- 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