Xuelong An

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LinkedIn GitHub Class Notes
https://awxlong.github.io

Education

2023 – 2024 **Master of Science** in Artificial Intelligence for Biomedicine and Healthcare.
• Master project: *Persister cell classification from histological images and genetic expression profiles through multiple-instance learning*
• MEDIQA-M3G: Leveraging BLIP, a multimodal VQA transformer, to solve query response generation given a patient's skin lesion images.
• UCL Nexus Lab: *Segmentation of blood vessels from 3D images of human kidneys through transfer learning*
• AI for Biomedicine and Healthcare: *Concept-bottleneck modelling for interpretable melanoma classification*.
• Deep representation and learning: review on *Deep learning for antibiotic discovery*
• Probabilistic modelling, Bayesian deep learning

2019 – 2023 **Master of Arts with Honors – 2:1 Class Division** in Cognitive Science.
• Thesis title: *Charting the Landscape of Neuro-Symbolic Reasoners*, with Dr. Antonio Vergari (Grade: 78%).
• Machine Learning Practical group project on *Assessing the Robustness of Neuro-Symbolic Modelling in the CLEVR-Hans3 Dataset* (Grade: 76%)
• Notable courses: Machine Learning and Pattern Recognition, Probabilistic Modelling and Reasoning, Reinforcement Learning
• STEM Ambassador: tutor at the Sudanese Hayes Community and volunteer at the 2023 Edinburgh Science Festival's MENACE event.

2013 – 2019 **American School of Guayaquil**
"Best Student" award for obtaining highest grade (9.86/10) in the Class of 2019

Personal Projects

2022 – · · · **AI for Latin American Youth**, where I teach programming and AI targeted to the Latin American audience.
• Film videos on programming posted on my YouTube channel *Class Notes*, with transcripts and code found at my GitHub website.
• Gave a discussion introducing neurosymbolic AI to an AI club from my hometown's ESPOL university.

Personal Projects (continued)

2021 – · · · **Junior researcher** undergoing personal projects revolving AI for healthcare:
• Participant of the UCL-FHIR Hackathon where I proposed using a Text-to-SQL dataset to train a NLP model that translates natural language queries to structured syntax to facilitate querying medical databases.
• Maintaining a personal blog where I publish articles revolving AI, including my review on *Deep Medicine* by Dr. Eric Topol, reflections on the Virtual Neurosymbolic Summer School 2023 organized by IBM research scientist Asim Munawar.
• Various lab presentations, where I publish my slides, scripts and thoughts I shared during weekly lab meetings with my undergraduate supervisor discussing NeSy AI.
• *Undergraduate Math Handbook*, where I continuously embed study notes relevant to machine, deep, and Bayesian learning.

2020 – · · · **AI, AGI, and Ai**, which is a work-in-progress where I discuss the consilience of knowledge in AI with biology, how it helps us understand ourselves, AGI and love (pronounced 'ai' in Chinese)

2018 – 2019 **Volunteer teacher** at Robert Allan Reed Center for Adults with Unfinished Education at the American School of Guayaquil.
• Taught adults ranging from 18 - 50+ years old every Saturday, teaching mainly in the fields of math

Skills

Languages	Professional proficiency in Spanish, English and fluent in Chinese.
Coding	Python, Jupyter, Slurm, Unix, R, Java, LaTeX, Dart, HTML, Haskell
ML/DL libraries	sklearn, matplotlib, seaborn, pandas, Pytorch, tensorflow, Pyro
Web Dev.	Jekyll
Misc.	Research, writing, teaching.

Hobbies

Books	Favorite books include *Consilience: The Unity of Knowledge* by Dr. Edward O. Wilson, *The Master Algorithm* by Pedro Domingos, *Deep Medicine* by Dr. Eric Topol, among others
Activity	Rowing, biking, ping-pong, chess
Programming	Kaggle competitor (GNN for multimodal single-cell prediction, BERT + SVM for AI-generated text detection), software engineering with Dart