Andi Zhang

PH.D. CANDIDATE IN COMPUTER SCIENCE

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Education

University of Cambridge
Cambridge, United Kingdom

PH.D. IN COMPUTER SCIENCE — *Oct. 2019 - Jul. 2023 (expected)*

- Supervised by Dr. Damon Wischik.
- Ph.D project is about a Quasi-Bayesian approach to uncertainty in deep learning

MASt. IN MATHEMATICAL STATISTICS — *Oct. 2018 - Jun. 2019*

- Mathematical Tripos Part iii. Relevant modules:
  Statistical Learning in Practise, Convex Optimization, Astrostatistics
  Bayesian Modelling and Computation, Modern Statistical Methods

M.PHIL. IN ADVANCED COMPUTER SCIENCE — *Oct. 2017 - Jun. 2018*

- Relevant modules:
  Machine Learning for Natural Language Processing, Algebraic Path
  Deep Learning for Natural Language Processing, Advanced Functional Programming
  Probabilistic Machine Learning

University of Manchester
Manchester, United Kingdom

B.SC. (HONS) IN COMPUTER SCIENCE AND MATHEMATICS — *Sept. 2014 - Jun. 2017*

- Relevant modules:
  Machine Learning, Quantum Computing, Compilers
  Convex Optimization, Probability, Statistical Methods
  Functional Analysis, Topology, Number Theory

Experience

Trinity College, University of Cambridge
Cambridge, United Kingdom

COUSRSE SUPERVISOR (TEACHING ASSISTANT) — *Oct. 2019 - Now*

- Supervised IA Algorithms (2020 Lent), IA Machine Learning (2020 Lent)
  and IA Introduction to Probability (2020 Easter)

MRC Biostatistics Unit, University of Cambridge
Cambridge, United Kingdom

RESEARCH ASSISTANT | SUPERVISOR: DR. SOFIA VILLAR AND DR. DAVID ROBERTSON — *Jul. 2019 - Sept. 2019*

- Built a simulation system for multi-armed bandit problem (MABP) in clinical trial.
- Presented a new test statistic for binary response MABP.

Tencent (WeChat AI)
Beijing, China

R & D INTERN | MENTOR: DR. JIE ZHOU — *Jul. 2018 - Sept. 2018*

- Concentrated on reinforcement learning and evolution strategy.

Amazon (Alexa)
Cambridge, United Kingdom

APPLIED SCIENTIST INTERN | MENTOR: DR. EMILIO MONTI — *Jun. 2017 - Sept. 2017*

- Concentrated on Neural Machine Translation (Sequence to sequence model).

Robotics Institute, Carnegie Mellon University
Pittsburgh, United States

STUDENT INTERN | SUPERVISOR: DR. STELIAN COROS — *Jun. 2016 - Sept. 2016*

- Assisted in implementing general stance controller for the 3D printable robotic creatures.
- Helped reproduce the prototype animation system.

Projects

A Quasi-Bayesian approach to uncertainty in deep learning

Cambridge, United Kingdom

Ph.D. Project | Supervisor: Dr. Damon Wischik

Dec. 2019 - Now

- Presented a Quasi-Bayesian approach to capture epistemic uncertainty for deep learning.
- Rethought the relationship between uncertainty and calibration of the classification problem and present a new evaluation method for neural network calibration.

Visualizing and Clustering Data Centre Transactions

Cambridge, United Kingdom

M.Phil. Project | Supervisor: Dr. Damon Wischik

Jan. 2018 - Jun. 2018

- Introduced several unsupervised deep learning models for business transactions.
- Set up three challenges in application level and solve them in a simulated application scenarios.
- The unsupervised deep learning models achieve a satisfying result in both visualization and clustering.

Add Uncertainty to Convolutional Neural Network by Gaussian Process

Cambridge, United Kingdom

Course Project | Supervisor: Dr. Damon Wischik

Jan. 2018 - Feb. 2018

- Coursework for LE49 Probabilistic Machine Learning.
- Proposed a GP classification model using CNN as its kernel implicitly.
- Claimed a "punitive" metric baed on epistemic uncertainty, in which the proposed model performs far better.

Deep Reinforcement Learning on Video Games

Manchester, United Kingdom

B.Sc. Project | Supervisor: Dr. Jonathan Shapiro

Jul. 2016 - Mar. 2017

- Implemented agents on OpenAI Gym and Malmo (Minecraft Agent Platform).
- Compared the effect of Deep Q Learning and Deep Recurrent Q Learning on different environments.

Stendhal Game

Manchester, United Kingdom

Coursework for Software Engineering | Supervisor: Dr. Suzanne Embury

Jan. 2016 - May. 2016

- Added some new items, NPCs and quests to the open source online game Stendhal.
- Designed and implemented a new efficiency quest mechanism for game designer.
- Refactored the existing quest code to suit the new quest mechanism.
- Won the Stendhal Quick Quest Challenge held in Software Engineering course (1st place).

Honors & Awards

The Williams/Kilburn Medal for outstanding final year student

Manchester, United Kingdom

School of Computer Science, University of Manchester

Jul. 2017

The medal is awarded on an occasional basis to students of exceptional distinction whose performance throughout their undergraduate course has been of outstanding merit.

University awards for outstanding academic achievement

University of Manchester

The University will consider the top 0.5% of undergraduates (nominated by each School) for this award.

Professors' Prize for the best third year student (joint honor)

School of Computer Science, University of Manchester

Prize for the Top 1 student.

Professors' Prize for the best second year student

School of Computer Science, University of Manchester

Sept. 2016

Prize for the Top 1 student.

Michael Jealous memorial prize for best first year student

School of Computer Science, University of Manchester

Sept. 2015

Prize for the Top 1 student.