

RYLAN SCHAEFFER

SKILLS

Languages

Python
R
MATLAB
C++
SQL (MySQL, Postgres, SQLite)

Libraries

TensorFlow
PyTorch
NumPy
Pandas
SciPy
Keras

Operating Systems

Linux
macOS
Windows

Contact

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EDUCATION

University College London | September 2018 (Expected)

Master of Research, Cognitive Neuroscience

Coursework includes Advanced Deep Learning and Reinforcement Learning by Google DeepMind

Founded and managed UCL Artificial Intelligence Journal Club (25 speakers in 9 months from DeepMind, OpenAI, Toronto, MILA, Stanford, Berkeley, Princeton, Oxford, and more)

University of California, Davis | June 2016

Bachelor of Science, Computer Science Engineering

Bachelor of Science, Statistics

Outstanding Senior Award, Department of Computer Science and Engineering

University of California Regents Scholar

EXPERIENCE

Wellcome Centre for Human Neuroimaging, Metacognition Group | September 2017 - Present

Computational Neuroscience Researcher

Proposed and executed two research projects under Dr. Stephen Fleming:

1) Human behavioral experiment to test how the stability of beliefs influences subjectively reported confidence.

Proposed and implemented a novel two-armed bandit task in Python, collected data using Gorilla and Amazon Mechanical Turk, and analyzed results using two-way mixed-effects repeated measures ANOVA and mixed-effects regression in R.

2) Deep reinforcement learning experiment to explain how metacognition detects erroneous decisions absent additional information and related phenomena (including the response-locked error-related negativity, metacognitive hypersensitivity, and the dissociation between performance and self-evaluation). Proposed and implemented a theoretically-grounded modification of the Advantage Actor-Critic architecture in TensorFlow. Currently proposing and implementing sequence of tests.

Thermo Fisher Scientific | May 2017 - September 2017

Deep Learning Research Intern

Demonstrated the applicability of deep learning to DNA sequencing by researching, proposing, implementing, training and testing a sequence-to-sequence RNN-based architecture with 99.24% test accuracy. Identified missing TensorFlow functionality and implemented own solution. Constructed necessary pipelines for extracting data from MySQL, converting data to TFRecords, and creating queues for reading and batching data.

Adversarial Neural Cryptography (Personal Project) | December 2016 - April 2017

Deep Learning Python Developer

Implemented "Learning to Protect Communications with Adversarial Neural Cryptography" by Abadi and Andersen using TensorFlow.

Professional Online Sports Betting (Graduate Course Term Project) | January 2016 - April 2016

Python Developer

Developed data pipeline to profit from online daily fantasy sports websites. Scraped and cleaned NBA data.

Modeled individual player performance using XGBoosting. Formalized lineup selection as integer programming problem and implemented solver that outperformed industry standard in 47% of cases and tied in 50%.

UC Davis, Dept. of Computer Science Undergraduate Researcher | Sept 2015 - June 2016

Python Developer

Led team to develop an online testing platform for use in UC Davis classes. Deployed in two courses to approx. 75 undergraduates. Built server to push test problems client-side and to accept student submissions.

UC Davis, Dept. of Computer Science Undergraduate Researcher | Jan 2015 - June 2015

MATLAB Developer

Developed and implemented an image analysis algorithm to predict radius of soot-obscured fuel droplets combusting aboard International Space Station for NASA. Reduced labeling time from 2.5 years to one week.

BLOG | JANUARY 2017 - MAY 2017

Published analyses of exciting new papers in artificial intelligence research. Posts topped HackerNews and r/MachineLearning and surpassed twenty thousand unique readers in a month. Examples:

[Neural Episodic Control by Pritzel et al.](#)

[Early Visual Concept Learning with Unsupervised Deep Learning by Higgins et al.](#)

[Overcoming Catastrophic Forgetting in Neural Networks by Kirkpatrick et al.](#)

[Neural Turing Machine by Graves et al.](#)