JUSTIN L. WANG

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EDUCATION

University of Illinois at Urbana Champaign, IL
Bachelor of Science in Computer Science & Mathematics
Expected: May, 2022 GPA: 3.85/4.00

TECHNICAL SKILLS

Languages : Python, Java, C++, MATLAB, MSSQL
Tools/Frameworks : PyTorch, Tensorflow

EXPERIENCE

D. E. Shaw & Co. **June 2021 - Current**
Quantitative Research Intern New York, New York, USA

- Found and analyzed optimal trading execution algorithms for minutely-fixed depth trading in the presence of forecasts of varying realizations and impact
- Explored reinforcement learning methods for finding optimal policies, including policy gradient and first-order methods

Matician **May 2020 - Aug 2020**
Research Engineer Intern Palo Alto, California, USA

- Modified Google FaceNet's unified embedding algorithm to learn one-shot open set re-id
- Developed and extended Facebook Detectron2 pipeline to include one-shot identity verification
- Experimented with variants of triplet loss to create a discriminate embedding in high order manifolds

SimBioSys Inc. **Jan. 2020 - May 2020**
Deep Learning Engineering Intern Urbana, Illinois, USA

- Constructed CNNs for segmentation and classification as input to physical biology models for tumor growth forecasting
- Modified a 3D U-Net to allow for categorical data injection and joint segmentation and classification training

Tsinghua University **June 2019 - Aug. 2019**
Tsinghua Laboratory of Brain & Intelligence Haidian, Beijing, China
Machine Learning Researcher

- Researched brain-inspired computing and neurologic processes through unsupervised learning
- Worked on NLP through extraction of spatiotemporal features from speech using sparse convolutional autoencoders
- Programmed hierarchical encoding and decoding of phonemes to mimic brain decomposition of language in neuron clusters

PUBLICATIONS[1]

Wang, J. L., Farooq, H., Ibrahim, A. K., and Zhuang, H., "Segmentation of Intracranial Hemorrhage Using Semi-Supervised Multi-Task Attention-Based U-Net," *Applied Sciences*, 2020.

Wang, J. L., Zhuang, H., Ibrahim, A. K., Cherubin, L., and Ali, A. M., "Medium-Term Forecasting of Loop Current eddy Cameron and eddy Darwin formation in the Gulf of Mexico with a Divide-and-Conquer Machine Learning Approach," *Journal of Geophysical Research: Oceans*, 2019.

RELEVANT COURSES

• Abstract Algebra • Abstract Linear Algebra • Data Structures • Deep Learning • Differential Equations • Optimization • Probability Theory • Real Analysis • Stochastic Processes

AWARDS & MISC.

- 2020 Franz Hohn and J.P. Nash Scholarship Recipient
- 2020 UIUC HackIllinois Hackathon Best Novel Use of Mathematics
- 2018 United States of America Computing Olympiad (USACO) Platinum Division
- 2018 United States of America Mathematics Olympiad (USAMO) Qualifier

[1] For a full list please see https://www.justinlwang.com/publications/