

# JUSTIN L. WANG

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## EDUCATION

**University of Illinois at Urbana Champaign, IL**  
*Bachelor of Science* in Computer Science, Mathematics & Statistics  
Expected: May, 2022

GPA: 3.85/4.00

## TECHNICAL SKILLS

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

## EXPERIENCE

### 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
- Set up efficient data streaming in Big Data environments for multi-gpu training of deep convolutional neural networks
- 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<sup>1</sup>** 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.

Wang, J. L., Li, A. Y., Huang, M., Ibrahim, A. K., Zhuang, H., and Ali, A. M., "Classification of White Blood Cells with PatternNet-fused Ensemble of Convolutional Neural Networks (PECNN)," *Proc. IEEE International Sym. on Signal Processing and Information Technology (ISSPIT)*, 2018.

## 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

<sup>1</sup>For a full list please see <https://www.justinlwang.com/publications/>