Ruihang Du

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Education

Purdue University *West Lafayette, IN*

B.S., Computer Science Minor: Mathematics GPA: 4.00/4.00 *May 2019*

Honors & Awards

Computer Science Department Endowed Scholarship Purdue University *Apr. 2017*

Employee of the Month Award Hilltop Apartments, Purdue University *Apr. 2017*

Courses

CS390 Data Mining Introductory machine learning course in Python. Covered basic supervised and unsupervised learning algorithms, as well as other machine learning techniques.

CS471 Intro to A.I. Introduction to reinforcement learning and probabilistic graphical models such as Bayesian Network and Markov Network.

Skills

Intermediate Python, C, C++, Java, HTML, Linux, R

Beginner Deep Learning, TensorFlow, PyTorch, LaTeX, bash scripting, JavaScript, Node.js

Experience

Purdue e-Lab *West Lafayette*

Undergraduate Researcher *Sep. 2017 - Present*

- Customizing Neural Network layers to accelerate Convolutional Neural Network training using Python, C++, and PyTorch.

Purdue AirSense Project, Indoor Aerosol and Exposure Lab *West Lafayette*

Undergraduate Researcher *May 2017 – Present*

- Designed an innovative ambient air quality sensor module that reduced the size and the cost of air quality monitoring equipment by a factor of 100 with two peers and faculty mentors.
- Proposed a data retrieval and interpretation procedure to extract data from the module using Python and shell script.
- Created an educational website to make the data accessible to the public using JavaScript, CSS, HTML, and XHTML.
- Completed a technical paper about the design of the sensor module under the supervision of faculty mentors.
- Helped faculty mentors set project plans and milestones for the fall semester.
- Trained a visiting scholar from Kenya on the assembly and the usage of the sensor module.

Presentation

Ruihang Du, Stephane Junior Nuoafo Wanko, Shadi Tariq Azouz, Brandon Emil Boor, and Greg Michalski, "Purdue AirSense: An Open-source Air Quality Monitoring System" (August 3, 2017). The Summer Undergraduate Research Fellowship (SURF) Symposium. Paper 88. http://docs.lib.purdue.edu/surf/2017/presentations/88

Leadership & Activities

SIGAI, ACM Purdue Chapter *West Lafayette*

Member & Vice President (Sept. 2017) *Jan. 2016 - Present*

- Devised a chess engine with SIGAI club members using Java.
- Engineered chess playing agents using Alpha-beta Pruning, transposition table, and the genetic algorithm.
- Presented the accomplishments of SIGAI in the past school year to the corporate sponsors.

The Spark Challenge Committee, Purdue University *West Lafayette*

Corporate Sponsor Contact & Programming Team Member *Aug. - Dec. 2016*

- Renovated the website for the Spark Challenge using Javascript, CSS, and HTML.
- Communicated with the representative from Microsoft for potential sponsorship of the event.

Projects

RasPyAlpha Data retrieval tools for Alphasense sensors using Python and Raspberry Pi GPIO. *Aug. 2017*

NNModule A modular implementation of Neural Networks in TensorFlow using Python. *Apr. 2017*

CS390 Projects Implemented Naive Bayes Classifier, Perceptron, K-means algorithm, and Asoociation Rules and Apriori algorithm. *Jan. - May. 2017*

CS471 Pacman A Pacman project that was adapted from Berkeley CS188. Designed Pacman agents using search algorithms such as DFS, BFS, A*, Minimax, and Alpha-Beta pruning. *Jan. - May. 2017*