

JONATHAN XUE

Chicago | (630) 677-8133 | jgxue2@illinois.edu | jonathanxue.com | github.com/Jonathan-Xue

EDUCATION

Present **University Of Illinois At Urbana-Champaign, Computer Science**, Urbana-Champaign, IL

- James Scholar

PROFESSIONAL/RESEARCH EXPERIENCE

09/2018-Present **Research Assistant, University Of Illinois At Urbana Champaign**, Urbana-Champaign, IL

- Analyze and accommodate test dependencies in regression testing algorithms
- Develop and extend upon implementations of test prioritization, selection, and parallelization algorithms within an existing Maven plugin for dependent-test detection

06/2018-08/2018 **Volunteer, FreeGeek Chicago**, Chicago, IL

- Deconstructed electronic devices into their core materials for waste recycling
- Unit tested hardware components (RAM, hard drives, graphics cards, etc.) to ensure functionality. Used PartedMagic to perform data sanitization
- Built Linux-based systems out of donated and recycled parts

06/2017-08/2017 **Research Assistant, McCormick School Of Engineering, Northwestern University**, Evanston, IL

- Ran simulations to study The Effect Of Nanoconfinement On The Structural And Transport Properties Of H₂O
- Wrote Python scripts to generate data files, each consistent of 10,000+ lines detailing the molecular composition/bonds of H₂O and a single-walled carbon nanotube of varying diameters
- Wrote separate LAMMPS input scripts for each experimental case to parse the data files and set appropriate parameters (bounding box, timestep, intermolecular interactions, etc.)
- Wrote Tel scripts to parse resultant LAMMPS outputs into a legible format for Excel analysis/visualization

SELECTED PROJECTS

Autumn 2018 **Stud-Vision**

- Enhances student education by scanning textbook pages/image and generating 3D models of difficult concepts
- Used Python in Blender to generate 3D chemical models of elements/compounds
- Used Vuforia in Unity to sync interactive 3D models in augmented reality to physical textbook pages
- Used Google Firebase's ML Kit and the Rapid Automatic Keyword Extraction (RAKE) natural language processing algorithm to parse and extract keywords from textual images

Autumn 2017 **Watchdog**

- Used Microsoft Azure's Cognitive Services Platform to develop a facial/emotional recognition software for educational application within classroom settings
- Automates attendance and offers teachers live in-depth analytics regarding the current state of their classroom by continuously collecting data on student emotions. The data is also aggregated to display trends over time.
- Lists the IDs of students with the highest engagement scores

Summer 2017 **Caveat**

- Used MongoDB to store Chicago crime data. Data is retrieved from the Chicago Data Portal at 5:00 a.m. each morning and a Python script is used to parse the resultant JSON file. Extraneous/invalid points are eliminated, and crimes are classified under the Uniform Crime Reports Categorization System.
- Used a Node.js Express Server to send data (JSON file of all recent crimes within a certain radius) to clients. Data analytics occur client-side, displayed via: a heat map of crime intensity/severity, a pi-chart detailing the occurrence rates of various crime categories, and a graph showing crime rates over time

LEADERSHIP, PROFESSIONAL ACTIVITIES AND AWARDS

| | |
|---|--|
| PennApps XVIII: Top 10 Hack, Top 30 Hack | Revolution UC VII: Best High School Hack |
| Huskie Hacks – Health & Wellness: Green Livin' | MHacks X: Qualtrics Best Use Of Data Visualization |
| Code For The Kingdom – Chicago: Best Pre-Existing Project | Hackridge: 3 rd Place, American Eagle's Choice, Best Domain |
| CodeDay Chicago 2017: Best Application, Best Overall | |

CodeDay Chicago 2018: Mentor

Illinois Junior Academy Of Science: State Student Executive Board

COMPUTER SKILLS

Languages: C, C++, HTML/CSS, Java, Javascript, Python, Tel

Database and Client/Server Technologies: Firebase, MongoDB, Node.js

Integrated Development Environments: Android Studio, Arduino, Atom, Cloud9, Eclipse, PyCharm, Visual Studio

Software: Adobe Illustrator, Adobe Photoshop, Adobe XD, Autodesk Inventor, Autodesk Maya. Microsoft Excel