

# Shen (Caden) Jiang

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## EXPERIENCE:

**Microsoft**, Experiences + Devices, Maps & Geospatial

**Jun 2019 – Present**

*Software Engineer*

- Worked on a 2-person team developing an SDK for Unity that provides the ability to visualize a 3D map component that streams and renders 3D cities and terrains with worldwide coverage. Provided customized map shapes, and user map interactivity such as panning and zooming in an Augmented Reality environment. Greatly reduced runtime rendering footprint and boosted performance in limited memory devices such as HoloLens or phones with AR capabilities.
- Worked on the native maps platform and added ability to visualize an animated map weather layer on Android. Wrote and ported over native C++ code via Java Native Interface, integrating functionalities into Android via a final Java layer.

**Microsoft**, AI & Research, Cortana @ Work and Bing Maps

**May 2018 – July 2018**

*Software Engineer Intern*

- Worked with the map data infrastructure team to streamline unstructured map data acquisition efforts. Filtered out noise and used machine learning techniques to automatically categorize data entries, greatly reducing human processing efforts.
- Used LINQ and C# logic to extract unstructured addresses from linked databases. From the data, formalized a set of attributes and entity relations to be fed into a machine learning model that helps with automatic address parsing and generation. The model can also be modified to apply to other important map attributes.
- Created a platform to easily visualize 3D roads from an area to aid in visual map data editing. Extracted all road segments from a defined area, gathered their height information and created a list of 3D objects. Used Leaflet.js and JavaScript to combine the objects and make a complete 3D roads map render.

**ThyssenKrupp Elevator Americas**, Research Innovation Center Atlanta

**Jan 2017 – Apr 2017**

*Computer Science Intern*

- Created a platform using the HoloLens SDK on Unity that transform 3D engineering models into holograms. Added shared experiences over local network where multiple HoloLens users can all view and interact with the same 3D model, speeding up real time collaboration on engineering products.
- Developed a prototype 3D map terrain system to visualize the company's new campus, with voice command that cycles through different locations and touch feedback that shows further contextual information.

## EDUCATION:

**Georgia Institute of Technology**, Atlanta, GA

**Aug 2015 – May 2019**

- Bachelor of Science in Computer Science Cumulative GPA 3.69 (Dean's List 2016, Faculty Honors 2017)
- Concentration in Intelligence and Media
- Barcelona Summer Program at Universitat Politècnica de Catalunya (Summer 2016)

**Research work at Georgia Institute of Technology**

**Lu Fluidics Group** - Engineered Biosystems

**Aug 2018 – May 2019**

*Undergraduate Research Assistant*

- Created a web platform with D3.js to visualize data for millions of video frames of worm behavior. Groups of data can be highlighted based on attributes, and each data point have a detailed information page with links back to the video frame. Also renders a heatmap for given data. The platform allowed much faster analysis than the original Matlab way.

**Lu Fluidics Group** - Engineered Biosystems

**Sep 2017 – Jul 2018**

*Undergraduate Research Assistant*

- Develop crowdsourced Android annotation application to identify and better characterize the structure and behavior of c. elegans "eigenworms". Manage through Firebase a large database of sources images and user drawings.
- Gamified the experience and published to the Google Play Store as "Wurm Paint" to reach a larger audience.
- Research Paper Publication: <https://www.future-science.com/doi/pdf/10.2144/btn-2019-0010>

## SKILLS:

**Languages:** Java, Python, C#, JavaScript, CSS, HTML, SQL, HLSL, ShaderLab, C/C++, Objective-C

**Systems/Tools:** Android Studio, Visual Studio, Unity, Windows Mixed Reality, MRTK, Photoshop, Git, Leaflet.js, D3.js, Firebase, Processing, Microsoft HoloLens, Matlab, Xcode

## PROJECTS:

**AirPnP**, Linode Sponsor Honorable Mention – PennApps 2016

**Sep 2016**

*Connecting private parking spaces with eager drivers*

- Created an Android crowdsourcing platform and designed a clean map interface for searching available parking spaces nearby.
- Hosted user map database with MongoDB and executed through Linode servers before sending back to Android device.
- Connected with Capital One's Nessie API for instant user payment and used Nexmo API to send SMS notifications.

- Places Now**, Devpost Staff Pick – HackGT@UPC Barcelona 2016 **Jul 2016**  
*Find better, more updated information about places through a merger of Google Maps and real-time feeds.*
- Created the Android app that used Google Maps API to search for places near current location.
  - Curated a database of live feeds on every location with Firebase, implemented information update and retrieval.
- WingBuddy**, First Prize Winner – HackEmory 2016 **Apr 2016**  
*Alerts you when your roommate is at home. Get that perfect opportunity when you need the room to yourself.*
- Created the Android app, retrieved information from Raspberry Pi motion detector and update the app display in real time.
- TheBot**, First Prize Winner – CodeB with Bloomberg hackathon 2016 **Feb 2016**  
*Stock trading algorithm in a simulated environment.*
- Focused on earning the highest dividend, analyzed stock price patterns to determine the best value stocks.
  - Grew an initial portfolio of \$3,000 to over \$500,000 during trading simulation.
- 2 by 2 Rubik's Cube Solver**, Grand Prize Winner – Georgia Tech Appathon 2015 **Oct 2015**  
*Solve 2 by 2 cubes by taking pictures of their sides.*
- Developed an Android app to acquire cube faces through the camera, processed image data with color detection algorithm.
  - Worked with teammates to incorporate Rubik's cube algorithm to display solution steps back to user.

## **LEADERSHIP AND COMMUNICATIONS:**

- Southeast Asian Student Association (SEASA)**, *Treasurer* **Jan 2016 – May 2017**
- Manage all SEASA funds, from member dues to event costs.
  - Raise awareness for SEASA with a singing item at International Harmony Day held by GT India Club.
  - Work with the executive committee to organize various fund-raising events throughout the year.
- Worldwide Opportunities on Organic Farms – New Zealand**, *Volunteer* **Mar 2015 – Apr 2015**
- Volunteered at two organic farms in New Zealand, learnt various farming techniques and sustainable practices.
- Language Proficiency:** English (Native), Chinese (Native), French (Intermediate), Spanish (Basic)