

Joseph Gao

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Education

Philadelphia, PA	University of Pennsylvania	Fall 2014 – Spring 2019
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- M.S.E in Computer Graphics and Game Technology, Spring 2019, 3.5 GPA
- B.S.E in Computer Science Engineering, Spring 2019, 3.5 GPA
- Coursework: Software Engineering and Design, Scalable and Cloud Computing, Algorithms, Operating Systems, Computer Architecture, Intro to Computer Graphics, Databases, Procedural Graphics
- Technologies: Java, Ruby, Python, C++, C, C#, JavaScript, Swift, Rails, Django, Hadoop, Unity3D

Experience

Software Engineering Intern	Slack Technologies	Summer 2017
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- Application engineering team

Research Assistant	SIG Center for Computer Graphics at Penn	Summer 2016
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- Developed an ambient noise generation algorithm that reproduces a location's sound environment when fed a short audio sample. The algorithm is based off of a SIGGRAPH paper titled *Video Textures* by Schödel et al.
- Built the UI for a proprietary graphics testing environment in Unity, allowing researchers to alter a rendered scene's parameters and have the environment dynamically respond without having to re-render the scene.
- Implemented a stochastic agent distribution system for a virtual market environment that enabled the accurate rendering of a randomly distributed homogeneous crowd adapting to predefined environment variables.

Full Stack Web Developer	Penn Labs	Fall 2015 – Spring 2017
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- Lead developer on several Django and Rails projects, supervised and trained student teams in web app dev.
- Developed an adaptable adsorption-based recommendations module for Penn Lab's web-based projects.

Teaching Assistant	University of Pennsylvania	Fall 2016 – Spring 2017
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- CIS 121 – Data Structure and Algorithms
- CIS 196 – Ruby on Rails Web Development
- Developed course content with Java and Ruby, created comprehensive testing suites with Capybara and RSpec.

iOS Engineering Intern	Vea Fitness	Spring 2016
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- Increased user retention rate from 20% to 30% by implementing a streamlined signup and login UX and UI.
- Rewrote several core features in Swift up by updating and replacing deprecated components.

Selected Projects

Mini Minecraft	Fall 2016
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- Built from scratch a miniature version of Minecraft that includes features such as crafting, noise-generated terrain, procedurally-generated geographical features, and texture + normal mapping and animation.
- OpenGL, C++

Surgery.io	Spring 2016
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- Enables surgeons to visually map out heart and brain surgeries and save and share various surgical configurations with other surgeons using the app for educational purposes.
- Approved for preliminary testing and use by the Hospital at the University of Pennsylvania.
- Django, JavaScript.

Watchman	Spring 2016
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- Personal safety app for law enforcement agents. The app uses both accelerometer and vitals data as indicators for when an agent might be in a situation, and dispatches for backup if the app suspects an agent is in danger.
- Swift, Ruby on Rails

PennVolvement	Spring 2016
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- Online job board that connects local humanitarian organizations in need of volunteers with students at Penn.
- Named the official volunteer job portal for Penn students by the Penn Undergraduate Assembly.
- Ruby on Rails, JavaScript