Johan Sebastian Ospina Buitrago

Research & Development Engineer

johanos.com | johanos | johanos | johanseospina@gmail.com | (919) 946-5567

Experience

MARKFORGED | Research and Development Engineer - Software III

Oct 2022 – Present | Boston, MA

- ➔ Gave expertise towards nascent Machine Learning, Big Data, and Computer Vision efforts
  - – Created end-to-end system for collecting, labeling, and training a **Machine Learning** model to discern valid signals inside of a noisy dataset
  - – Worked on setting up Computer Vision pipelines for image segmenation in 3D Build Volumes.
- ➔ Worked on Computational Photography Methods to capture images on new print head camera
- ➔ Filed patent for 3D Printer Slicer method to increase Metal X system part Z strength.

PTC - VUFORIA | Senior Prototyping Engineer

June 2021 – Sep 2022 | Boston, MA

- ➔ Validation Team
  - – Manipulated a **graph** data structure that was used to represent 3D locations as well as contextual data on **mobile** and **web** front ends
  - – Implemented on demand rendering system for the point cloud viewer used by PTC's products
- ➔ Vuforia Model Target Generator (MTG) and Area Target Generator (ATG)
  - – Addressed Technical Debt on the entire MTG and ATG codebases including configuring build tools (linters and formatters).
  - – Developed **ThreeJS** gizmos for the Vuforia SDK 10.10 User Volume feature. Effectively spearheading the effort to have a set of **reusable** 3D component libraries for the company

WAYFAIR | R & D Software Engineer II

July 2016 – March 2019 | Boston, MA

- ➔ Mainly Software work that Focused mostly on Augmented Reality, 3D, or similar experiences.
  - – published **Doll House Projection Mapping project** at CHI EA '20
  - – View In Room 3D for iOS and Android
  - – Wayfair Magic Leap launch experience for Helio Browser

PRINCETON UNIVERSITY | Research Assistant

Dec 2019 - May 2021 | Princeton, NJ

- ➔ Created a pipeline to gather quality image correspondence data from globally distributed users.
- ➔ Created a **software pipeline** to reproduce a **research paper** on calculating camera intrinsic parameters using image correspondences and projective geometry

Skills

PROGRAMMING

Proficient:
C# • JavaScript • TypeScript • Python • CSS • HTML •

Experienced:
Python • LaTeX •

Familiar:
Java • Shell • C++ • Swift • GCode

LIBRARIES/FRAMEWORKS

Angular • Node.js • React • LitElement • Eslint • Redux • Mocha • Chai • Pytorch • Numpy • Pandas • Matplotlib • OpenCV

TOOLS/PLATFORMS

Git • Github • VSCode • Unix • Unity

CONCEPTS

Optimization Techniques • Linear Algebra • Machine Learning •
Neural Networks • Computer Vision • Computer Graphics

LANGUAGES

Spanish • French • German

Education

PRINCETON UNIVERSITY

Master's of Science in Computer Science

Sep 2019 - May 2021 | Princeton, NJ
Cum. GPA: 3.72 / 4.0

BOSTON UNIVERSITY

Bachelor's of Science in Computer Engineering

Sep 2013 - May 2017 | Boston, MA
Magna Cum Laude
Cum. GPA: 3.65 / 4.0