

# Joshua E. Yu

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## EDUCATION

### Georgia Institute of Technology

Aug 2023 – May 2026 (expected)

M.S. Computer Science

Current GPA: 4.00

- **Coursework:** Machine Learning, Artificial Intelligence, Graduate Intro to Operating Systems, Software Development Process, Human-Computer Interaction, Data Structures and Algorithms

### University of California, Los Angeles

Sep 2015 – Jun 2019

B.S. Chemical Engineering

GPA: 3.90

- **Honors:** *Summa cum laude*; Dean's Honors List for 7 quarters

## SKILLS

- **Programming Languages:** C, C++, Java, Python, GLSL, PowerShell, VBA, MATLAB
- **Technologies:** OpenGL, Linux, Hyper-V
- **Tools:** Git, GitHub, IntelliJ IDEA, Docker, Bash, Make, Jupyter Notebook, LaTeX
- **Libraries:** PyTorch, skorch, scikit-learn, NumPy, pandas, Matplotlib

## PROJECTS

### “Plum” 3D Graphics Engine

C++, OpenGL, GLSL

- Designed and built an interactive 3D graphics engine utilizing deferred rendering and metallic-roughness PBR to visualize 3D objects and experiment with real-time rendering techniques
- Implemented a GUI for placing light sources, models, colored/textured shapes, and a skybox in the scene
- Incorporated shadow mapping, ambient occlusion, HDR tone mapping, bloom, and fast-approx. antialiasing

### Supervised Learning Models for Data Classification

Python, PyTorch, skorch, scikit-learn

- Trained and optimized neural networks, support vector machines (SVM), and k-nearest neighbors (k-NN) classification models on two real world datasets, resulting in minimum accuracy of > 92%
- Plotted and analyzed validation curves to argue that SVM's radial basis kernel and k-NN's squared distance function are more suitable for continuous feature sets than categorical feature sets

### Multithreaded File Transfer Protocol

C, Linux, Docker

- Implemented a multithreaded getfile protocol between client, proxy, and cache programs using sockets, semaphores, and shared-memory IPC, enabling fulfillment of file requests from local cache or the Internet

## WORK EXPERIENCE

### Automation Engineer II

Aug 2021 – Jun 2024

Takeda Pharmaceutical Company

Los Angeles, CA

- Served as manufacturing engineer & system administrator for DeltaV control system at a manufacturing plant
- Met cross-functionally with Quality, Compliance, Manufacturing, and IT teams to remediate urgent DeltaV issues, collect requirements for long-term projects, and coordinate windows for releasing changes to production
- Deployed new Cisco network switches and reconfigured Windows Hyper-V servers to increase reliability and uptime of 100+ DeltaV operator terminals, reducing overall downtime of manufacturing operations
- Wrote and tested PowerShell scripts to automatically disable inactive users, reducing administrative workload
- Designed elements of the network architecture for a DeltaV hardware and software upgrade with > \$1M budget

### Operations Development Program Associate

Jul 2019 – Aug 2021

Takeda Pharmaceutical Company

Los Angeles, CA and Lexington, MA

- Supervised and trained 8 manufacturing operators over 8 months while collaborating with Engineering and Science teams to ensure successful production and release of a critical orphan drug for infant botulism
- Designed and developed an Excel VBA application to streamline planning and data collection workflows for lab experiments, meeting regularly with scientists to gather feedback and make improvements accordingly