XUELONG MU

Washington, D.C. · (724) 799-9061 · xuelongmu@gmail.com · muxuelong.com · linkedin.com/in/xuelongmu

EDUCATION

Columbia University - School of Engineering and Applied Science *2018*
B.S., Mechanical Engineering (GPA 3.9/4.0)
Honors: Cum Laude, Tau Beta Pi, Pi Tau Sigma, Mechanical Engineering Department Certificate of Merit

WORK EXPERIENCE

Pending Kill June 2020 - Present
Gameplay Programmer *Remote*

- Creating indie games in collaboration with a technical artist. Ongoing projects include a multiplayer action RPG, a physics-based 3D movement puzzler, and a 2.5D sci-fi Metroidvania.
  - Developed networked magic and melee combat system using Gameplay Ability System and AnimNotify.
  - Developed Steam networking features including session list, hosting/joining sessions, waiting lobby, and round-based matches.
  - Managing VCS systems including Perforce hosted on AWS EC2, and Git + LFS hosted on GitLab.
- Uploading quality educational game dev tutorials on YouTube. Topics include material shader animation, instanced static meshes, randomized material instances, animation retargeting, health/damage systems, pickups, and saving/loading games.

Radical Motion August - September 2020
Software Engineer (Contract) *New York, NY*

- Developed Unreal Engine LiveLink integration in C/C++ to stream real-time animation data to UE4 editor sessions, a core product feature for Radical Studio.

Voodoo Manufacturing November 2019 - June 2020
Robotics Engineer (Contract) *New York, NY*

- Developed ROS C++ robotics platform for trimming dental clear aligners with submillimeter precision.
  - Responsible for all software, including path planning for smooth and accurate cutting profile, calibrating robot workspace/end effectors, digital I/O for controlling suction mount and drill spindle, and WebSockets cloud integration to larger factory OS.
  - Cut trimming cell cycle time by three-fold.

DMC, Inc. June 2018 - November 2019
Systems Engineer *New York, NY*

- Responsible for system design, software programming, and onsite commissioning for engineering projects in a variety of industries at a consultancy firm. Selected projects:
- Desktop application for controlling a torque wrench calibration machine (C#/.NET)
  - Complete rewrite of legacy control software; implemented modern UI/UX from in-house designer.
  - Owned the EF6/SQL backend for storing system settings, test results, and user permissions.
  - Automated PDF generation of ISO-compliant calibration certificates, replacing tedious Excel work.
- Mobile application for automated pressure testing with Bluetooth hardware (React Native for iOS/Android)
  - Implemented screens, navigation, testing flow, and PDF generation of test results.
  - Used as a handheld, low-cost solution for testing pipeline pressure on offshore oil rigs.
- Desktop application for End-of-Line dimensional verification station for auto industry (LabVIEW)
  - Responsible for backend architecture, UI, testing flow, results storage, and tolerance calculation.
  - Tested and verified completed system during onsite commissioning at client facility.

- Desktop application for End-of-Line electric vehicle battery testing (LabVIEW)
  - Developed a flexible and modular logging system that stores test results, grades their success, and saves them to a cloud database via a RESTful API.
  - Tested and verified completed system during onsite commissioning at client facility.

Columbia University Robotics Group September - December 2017
Research Assistant *New York, NY*

- Integrated an Alexa skill into a ROS robotics platform to control an assistive robot arm. Designed to enable users with disabilities to grasp and move nearby objects.

Voodoo Manufacturing May - August 2017
Engineering Intern *New York, NY*

- Developed ROS robotics platform to perform vision-based pick and place with millimeter-level accuracy, to autonomously operate a cell of 3D printers without prior calibration of printer positions.
- Designed and fabricated a cart storage system for glass plates using 3D printed parts.

ADDITIONAL PROJECTS

Action RPG Prototype
Programmer

Developing a multiplayer action RPG prototype with UE4, Steam networking, and the Gameplay Ability System (used in Fortnite and Paragon). Features fast-paced, match-based gameplay where the player chooses classes with different elemental magic abilities. Responsible for all programming aspects.

Antifreeze
Programmer

Developed a first-person movement puzzler for the Unreal Engine Spring Jam, a five-day game jam. Responsible for environmental interaction, projectiles, level design, and sound design.

Pulled Over
Writer, Director

Wrote and directed a 360-degree VR short film that follows four high school students who get pulled over on their way home from school. Developed post-production workflow to clean up visuals in Mocha Pro and process ambisonic spatial audio in Facebook Spatial Workstation.

Healios
Project Lead

Managed a team of developers to prototype an accessible, high-quality mental health care service for natural disaster victims, using AI to streamline the onboarding and triage process. Named a Global Finalist in the 2019 IBM Call for Code Global Challenge (4th out of 5000+ entries).

SKILLS

Languages	C++, C#, Java, Python, Javascript, HTML/CSS, Bash, SQL, MATLAB
Frameworks	Unreal Engine, .NET, ROS, Entity Framework, React Native, Flask
Unreal Engine	Networking, GAS, UMG, Blueprints, AI + Behavior Trees, Anim Graph, Profiler, VR UI/Locomotion, Materials, RenderDoc
Version Control	Perforce, Git, Git-LFS, SVN
Project Management	Agile, Kanban, scope, technical sales, client interaction, leadership, public speaking