Yuanlong Zhou

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EDUCATION

Texas A&M University	Master of Computer Science (STEM)	*GPA: 3.8 / 4.0*	**Aug 2023 – Dec 2024**
Sichuan University	B. Eng in Computer Science & Finance (Dual-Degree)	*GPA: 3.8 / 4.0*	**Sep 2019 – July 2023**

- ❖ Courses: Object-Oriented (C++, Java, Python), Software Engineering, Deep Learning, AI, HCI, Graphics, Animation, Compilers, OS, Algorithm, Distributed System, AWS, Database, Network (TCP/IP), Web & Android, Math, Statistics, Quantitative Finance.

EXPERIENCE

Texas A&M University – Aggie Graphics Group | *Graduate Research Assistant*   **Jan 2024 – Present**

- Streamlined state-of-the-art Computer Vision & Graphics pipelines in 2D object detection/segment/track (grounding-DINO, SAM2) with adoption of Generative AI models (text to image, text/image to 3d model) using diffusion, dream fusion, wonder3d, etc.
- Deployed GPU acceleration (CUDA kit) for SLAM to reconstruct 2D videos into 3D space (Nerf, Gaussian Splatting or point cloud).
- Scripted with OpenCV, Open3D on 3D model data, processed mesh, vertices, texture, plane segmentation in MeshLab, Unity3D.

Amazon | *Applied Scientist - Internship*   **May 2024 – Aug 2024**

- Designed and implemented HOTW automation algorithms for market image generation, achieved 18% coverage for Japan market.
- Coordinated with fixed/dynamic layout generation, image processing (shadow, background removal) and text parsing algorithm.
- Built a Target Planner to schedule quad card widgets on homepage that recommend interest ASINs with customer personalization.
- Reviewed ACVC papers, engineered AWS skills (S3, Cloud9, EC2, IAM, Sagemaker, Andes), and configured production pipeline.

Google Summer of Code | *Open-Source Developer for Rocket.Chat*   **Mar 2024 – Aug 2024**

- Developed AI Programmer in TypeScript by LLM integration (Mistral, Llama) for code generation/refinement on given text input.
- Conducted prompt engineering (CoT) to avoid improper injections and ensure expected functionality, able to sustain 90+ % attacks.
- Managed OAuth2 authentication for users to upload code pieces into GitHub as Pull Requests or Gist post via RESTful APIs.

Dots Rhythm Tech. | *Full Stack Engineer - Internship*   **Dec 2022 – May 2023**

- Constructed and maintained Spring MVC infrastructures using Vue, React, Django, Redis, MongoDB to support trade businesses.
- Orchestrated C/S interactions using Postman & Apache Tomcat, worked in CI/CD pipeline to enhance efficiency and consistency.

PROJECT

Auto Album Management System | *Human AI Interaction*   **Feb 2024 – May 2024**

- Enabled convenient album management by allowing users to search, retrieve, and filter images by inputting text prompt in seconds.
- Combined the power of LLM and Azure vectorize APIs, extracting keywords from text input and vectorize them for comparison.

Dynamic Interactive Virtual Platform on Forage | *J.P. Morgan Chase & Co.*   **Jan 2024**

- Set up a dev environment by configuring React, Node.js, nvm tools and dependencies, fixing repository files to ensure correct output.
- Contributed to JPMorgan's open-source library Perspective to generate interactive trading interfaces for real-time finance data feeds.

Machine Learning Based Financial Risk Management | *Nanyang Technological University*   **July 2022 – June 2023**

- Ensembled multiple Machine Learning algorithms with finance quantitative models, executed Feature Engineering (Encoding, PCA, LDA, RFE) to capture informative patterns, bolstering model's predictive performance of CSI 300 crisis (Kaggle datasets) by 27%.
- Dived deep into Hyperparameter Tuning and Model Interpretation (PDP-ICE, Confusion Matrix, SHAP) to foster generalization.

Educational 3D Game on Emotional Treatment | *Huawei Student Development Club*   **April 2021 – Dec 2022**

- Delivered virtual treatment services by creating an immersive VR/AR Metaverse game on Unity3D to mitigate emotional issues.
- Architected OpenGL (GLSL) rendering pipeline, computed convex optimization, gradient descent in GPU with shader compilation.

Automatic Big Data Analytics System | *National Innovation and Entrepreneurship Contest*   **Sep 2020 – Dec 2021**

- Automated data analytics pipeline for scalable data (>8TB) by distributed computing (Hadoop, Spark, Big-Query warehousing, etc.)
- Enforced NumPy/Pandas, sklearn/PyTorch/TensorFlow and Matplotlib for advanced data analytics, with MySQL CRUD processes.

CERTIFICATE & LEADERSHIP

- ■ Double National Prizes of College Students' Innovation and Entrepreneurship Contest
- ■ Meritorious Winner of the Mathematical/Interdisciplinary Contest in Modelling (MCM/ICM)
- ■ Blue Bridge Cup of Software and Information Technology Coding Competition
- ■ Co-Founder and CTO of a Startup Tech Company *(Acquired 4 Copyrights & 2 Patents)*
- ■ President of Game R&D Community, Student Union Member *[Dean's List Scholarship, Outstanding Student Award]*

SKILL

- ➢ Coding Language: C/C++, Java, Go, Python, C#, JavaScript, TypeScript, HTML/CSS, OpenGL(WebGL) SQL, Shell, R, etc.
- ➢ Software: Adobe & MS Office suits, Google Drive, colab, Jupyter, CMake, Git, Android, Vulkan, Power BI, Matlab, AWS, GCP, Azure, SPSS, LaTeX, Oracle, Figma, VMware, Stata, Angular, JVM, Linux (red hat, ubuntu), Miro, slack, IntelliJ, Visual Studio.