Liujie Zheng

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EDUCATION

- **University of North Carolina at Chapel Hill** — Chapel Hill, NC
  B.S. in Computer Science, B.S. in Statistics and Analytics, Minor in Studio Art — Aug 2020 - May 2024
  - **GPA**: 3.85 | Dean's List
  - **Courses**: Data Structures and Analysis, Foundations of Programming, Modern Web Programming, Computer Organization, Machine Learning, Deep Learning, Computer Vision
  - **Tutorship**: Learning Assistant of Data Structures and Analysis Course (Jan 2023 - Present)

SKILLS

- **Programming Languages**: Python, Java, C, C#, JavaScript/HTML/CSS, R
- **Frameworks/Tools**: PyTorch, OpenCV, Jupyter Notebook, Scikit-learn, Linux, React.js, Node.js, Git, Bash, Docker, Unity Engine, RStudio, Adobe Photoshop

EXPERIENCE

- **University of North Carolina at Chapel Hill** — Chapel Hill, NC
  Research Assistant — Sep 2022 - Present
  - **Novel View Synthesis**: Applied and trained NeRF models in PyTorch for synthesizing novel views of complex scenes with a sparse set of input views.
  - **U-Net Video Autoencoder**: Implemented and trained a modified U-Net convolutional neural network model as a video autoencoder in PyTorch for further study of memory-augmented neural networks.

- **NetEase Games** — Hangzhou, China
  Player Feedback Analyst — July 2020 - Sep 2020
  - **Game Prototype Field Survey**: Conducted field surveys for 4 game prototypes, gathering hundreds of quantitative and qualitative feedback pieces.
  - **Player Feedback Report**: Created data visualizations and generated player feedback reports for each game prototype to communicate with developers and inform decision-making.

PROJECTS

- **Panorama Stitching** — Feb 2023
  - **Feature Detection**: Implemented scale-invariant feature transform detector to detect and describe features in input images with OpenCV.
  - **Image Alignment and Blending**: Implemented random sample consensus technique for feature matching. Aligned and blended the input images to stitch a panorama with OpenCV.

- **Platform-adventure Game Demo** — Aug 2020
  - **Game Mechanics Programming**: Designed and implemented core game mechanics (movement, avoidance, and attacking) and over 5 villain AIs in Unity Engine using C#.
  - **Character Movement Animation and Programming**: Designed and made more than 30 sets of character movement animations and implemented them in Unity Engine to ensure seamless transition and integration with game physics.
  - **Main Menu, Pause Menu Design and Programming**: Designed and implemented user interface elements for main menus and pause menus in Unity Engine. Create user flows and wireframes to ensure intuitive user experiences.

- **Puzzle-platform Horror Adventure Game Demo (2020 Global Game Jam Project)** — Jan 2020
  - **Game Mechanics Programming**: Implemented core game mechanics (moving, searching and hiding) and villain AI in Unity Engine with C#. Collaborated with artists and designers to ensure seamless integration of gameplay features.