Ryan C. Schmelzle

Computer Science PhD Student

Relevant Coursework

Computer Vision
VR & 3D Graphics
Computational Photography
Computational Geometry
Neural Rendering
Deep Learning
Introduction to Robotics
Introduction to Cybersecurity
Models of Languages and Computability Theory
Programming Languages
Modern Web Programming
Data Structures & Algorithms
Interpersonal Organization and Management

Skills

Python
Blender
Deep Learning
Agile Processes
Communication
2D & 3D Design

Certifications

Microsoft Word, Excel, PowerPoint
Adobe Illustrator

Professional Interests

Computer Vision
Computer Graphics
Deep Learning
Graphic Design
Image Processing

Education

PhD Student – The University of North Carolina at Chapel Hill, *May 2028*
First Year PhD Student in Computer Science

Bachelor of Science – The University of North Carolina at Chapel Hill, *May 2023*
B.Sc. in Computer Science, Communications Studies; Data Science Minor
GPA: 3.93; Phi Beta Kappa; Honors Carolina; Dean's List

Fort Myers High School, *Fort Myers, FL, May 2019*
GPA: 5.89; International Baccalaureate Diploma Program; National Merit Scholar

Employment History

Research Assistant – Graphics and Virtual Reality Group, UNC Chapel Hill
(September 2022 –present)

- Worked a variety of projects related to applications of computer vision and emergent technologies, including software for stereoscopic 3D displays, novel view synthesis pipelines for 3D telepresence systems, non-camera object recognition, spatial audio filtering, and AR assistive devices. Advised by Professors Henry Fuchs and Praneeth Chakravarthula.

Software Engineering Intern – Ford Motors, Dearborn MI (Remote Position)
(May 2022 – August 2022)

- Full stack software development for Ford Credit's vehicle recommendation service.
- Utilized Java, JavaScript, Vue.js, HTML, CSS, SQL, Jenkins, SonarQube, Git, and IntelliJ to develop software for front-end, back-end, and database programs.
- Employed Agile development principles such as TDD, pair programming, and iterative development.

Undergraduate Learning Assistant – Discrete Structures, UNC Chapel Hill
(August 2020 – December 2020)

- Instructional assistant for UNC's Department of Computer Science.
- Held office hours, moderated classes, and graded coursework.

Leadership Experience

North Carolina Fellow, North Carolina Fellows Program *(February 2020 – present)*

- Member of a 3-year program focused on personal growth and the development of collaborative leadership and management skills.

Board Member, UNC Association for Computing Machinery *(January 2021 – August 2022)*

- Organized events for computing students in the Raleigh-Durham area, including the hackathons and interviews with notable professors such as Fred Brooks.

Personal Projects

Autoencoder-Based Neural Depth Detection

- Used TensorFlow/Keras to develop a supervised machine learning approach for estimating depth in 2D images based on convolutional autoencoder networks.
- Used Blender 3D modelling, material and lighting animation, and particle systems to synthesize training data and disparity labels for pixels.

Fixed-Depth On-Screen Parallax Simulation

- Simulated depth cues on-screen based on the location of a fixed-distance viewer by projecting points to the camera plane and using LBP cascade facial tracking.

Automated Panorama Stitching

- Used SURF feature matching, RANSAC outlier detection, and homography transforms to stitch subsequent frames of video and create panoramic images.

rysch01@cs.unc.edu
(239) 634-1753
201 S Columbia St, Chapel Hill, NC 27599
https://www.linkedin.com/in/rysch01/