Peizhen Zheng

699 Spring St, Atlanta, GA 30308
404-493-7477 pzheng46@gatech.edu linkedin.com/in/peizhen-zheng-9164b8264 github.com/pzheng460

Education

Georgia Institute of Technology **(Expected) May 2024**
College of Computing, Master of Science in Computational Science and Engineering, GPA: 3.81/4.0 *Atlanta, United States*

University of Illinois Urbana-Champaign **May 2022**
Dual Degree Program with UIUC, Bachelor of Science in Civil and Environmental Engineering *Champaign, United States*

Zhejiang University **June 2022**
ZJU-UIUC Institute, Bachelor of Science in Civil and Environmental Engineering, GPA: 3.70/4.0 *Zhejiang, China*

Research Interests

Simulation and Rendering in Computer Graphics, especially in:

- **Cloth Simulation:** Focused on developing and refining algorithms to realistically simulate the behavior of cloth in virtual environments, including interactions with dynamic settings and complex scene integration.
- **Hair Simulation:** Researching and implementing efficient algorithms to simulate the physical behavior of hair under dynamic conditions, such as the impact of wind and inter-strand collisions.

Research Experience

Georgia Institute of Technology **Nov 2023 – Present**
Graduate Research Assistant *Atlanta, United States*

- Supervisor: Bo Zhu
- **Fluid Simulation** in Computer Graphics: Simulated granular flow as incompressible viscoplastic fluid.
- Developed an efficient geometric multigrid solver for incompressible viscoplastic fluid for the full implicit viscosity system in **Taichi** programming language.
- Implemented a multigrid-preconditioned conjugate gradient algorithm in the full implicit viscosity system.
- Integrated yield condition testing in simulation models based on the Mohr-Coulomb criteria to better distinguish material failure conditions.
- Cooperated with a PhD student from Dartmouth College.

Zhejiang University **April 2019 – Sep 2020**
Student Research Training Program (SRTP) *Zhejiang, China*

- Supervisor: Simon Hu
- Developed a hybrid algorithm for a **two-echelon vehicle routing problem(2E-VRP)**.
- Combined K-means clustering algorithm and simulated annealing algorithm to construct a reasonable hybrid algorithm to solve the two-echelon vehicle routing problem in **Python**.
- Computed the routes of a set of primary echelon and secondary echelon, with determined depot and satellite locations, to meet each customer's needs and minimize delivery costs.
- Conducted main research studies and documented all findings and results.

Teaching Experience

Zhejiang University **Feb 2020 – June 2020**
Teaching Assistant *Zhejiang, China*

- Supervisor: Chia-Fon Lee
- Teaching Assistant for TAM212: Dynamics
- Kinematics and dynamics of the three-dimensional motion of particles.
- Kinematics and dynamics of the plane motion of rigid bodies.
- Methods of work/energy and impulse/momentum.

Work Experience

Giga Force Electronics Co., Ltd **May 2023 – August 2023**
Software Engineer Intern *Shanghai, China*

- Redesigned the testing fixtures and utilized **C#** and **.NET** to develop new testing **WinForm** software with a client-server architecture.
- Leveraged the software for voltage testing, current testing, power testing, rotation speed testing, result retrieval, and seamless data integration with **MySQL** database.
- Integrated **MODBUS** communication protocol for equipment testing and utilized **XML** files for configuration recording and management.
- Implemented a multithreading approach, utilizing two independent consoles to simultaneously control four devices each, resulting in an outstanding 50% increase in efficiency.

Architectural Design & Research Institute of Zhejiang University Co, Ltd **July 2020 – August 2020**
Civil Engineer Intern *Zhejiang, China*

- Acquired proficiency in CAD and PKPM software to support architectural design workflows.
- Collaborated closely with senior team members on the iterative design process of a client's building project, adapting to evolving client requirements.
- Assisted in the development of engineering drawings, contributing to the detailed execution of the design schemes.
- Navigated the challenge of integrating initial project specifications with emergent client needs to ensure a cohesive and responsive design outcome.

Skills

English Proficiency:
TOEFL(IBT): 107(30/30/20/27) (tested in 2021)
Awarded CET-4 and CET-6 in China
Japanese Proficiency:
Self-Study, around Japanese Language Proficiency Test (JLPT) N3 level
Programming Languages:
Over 5000 lines: Python, Java, C++, C#, JavaScript/TypeScript, LaTeX
Over 1000 lines: C, HTML/CSS, SQL, Matlab, Assembly
Developer Tools: Visual Studio Code, Visual Studio, PyCharm, WebStorm, IntelliJ IDEA, CLion
Technologies/Frameworks: Shell, Git, .NET, React.js, Vue.js, Flask, Bootstrap, Google Firebase, OpenGL, Cuda, Taichi

Honors, Awards and Interests

- Awarded Third-Class Academic Excellence Scholarship of ZJUI institute of Zhejiang University for 2018
- Awarded Excellent Student Activity Award for the 1st Conference of Asian Sustainable Campus Network (ASCN)
- Group leader of Green Ambassador Group in Zhejiang University International Campus
- Got the 10 level amateur violin certificate in China
- Video Game Development