Shiqi Zheng

Email: shiqi_zheng@brown.edu | LinkedIn: linkedin.com/in/zhengshiqi | Bio: stevezhengshiqi.github.io

EDUCATION

Brown University *Providence, RI*
M.S. in Data-Enabled Computational Engineering and Science *Aug 2023 - Present*
Core Courses: Parallel Computing on Heterogeneous (CPU+GPU) Systems, Numerical Solution of Partial Differential Equations, Fluid Mechanics

University of North Carolina at Chapel Hill *Chapel Hill, NC*
B.S. in Computer Science and Physics; Minor: Data Science *Aug 2021 - May 2023*
Graduated with Distinction Degree Honor
Core Courses: Machine Learning, Models of Languages and Computation, Algorithms and Analysis, Basic Mechanics, Calculus-based Electromagnetism and Quanta, Calculus-based Mechanics and Relativity

RESEARCH EXPERIENCE

Brown Space Engineering, Brown University *Providence, RI*
System Engineer on Attitude Determination and Control System (ADCS) *Apr 2023 - Present*

- Designed and wrote full control algorithm for Attitude Determination and Control System (ADCS) in MATLAB on a NASA-sponsored 3U CubeSat [web]
- Developed 6DoF Model using Simulink with quaternion calculation to compute attitude error and implemented animated visualization for CubeSat orbiting

DOP Research Group, Tianjin University *Remote*
Fluctuations of Heavy Quark Initial Distribution in Nuclear Collisions *Jun 2022 - Present*
Supervisor: Associate Professor Baoyi Chen

- Applied Monte Carlo methods to study fluctuations in nucleon distribution within nuclear collisions
- Utilized Parrel Computing and Deep Learning techniques to numerically compute non-prompt J/ψ nuclear modification factor and analyze fluctuations in nuclear collisions by exploring imaginary potential and collision factor

PUBLICATIONS

1. Bottom energy loss and non-prompt J/ψ production in relativistic heavy ion collisions
   Meimei Yang, **Shiqi Zheng**, Bo Tong, Jiaxing Zhao, Wenyuan Ouyang, Kai Zhou, Baoyi Chen - ArXiv [pdf]
2. Fourier-Flow model generating Feynman paths
   Shile Chen, Oleh Savchuk, **Shiqi Zheng**, Baoyi Chen, Horst Stoecker, Lingxiao Wang, Kai Zhou - ArXiv [pdf]
3. Research on Fingerprint Recognition Algorithm
   Linglong Tan, Huanyun Chen, Xiaoyao Yin, **Shiqi Zheng** - IOP Publishing [pdf]
4. Design and Implementation of Multi-rate Digital Signal Processing Software Based on FPGA
   Xiaoyao Yin, Yingchi Lin, **Shiqi Zheng**, Yuankui Wang - IEEE [web]
5. Detection Method of Stealing Complex Network Attack Considering Security Situation Awareness
   Shiqi Zheng - IEEE [web]
6. Safety Risk Management System in Electric Power Engineering Construction under the Background of Big Data
   Cheng Zhao, Haomei Jia, Ran Gao, **Shiqi Zheng**, Fengzhi Wu, Han Wang - IEEE [web]
7. Heart Attack Prediction with Artificial Neural Network
   Shiqi Zheng - Clausius Scientific Press [pdf]

AWARDS & HONORS

Computer Science

- Kaggle Competition Expert [web]
- Kaggle Hungry Geese Silver Level (2021)
- Kaggle CommonLit Readability Prize Silver Level (2021)
- Kaggle Coleridge Initiative - Show US the Data Bronze Level (2021)
- FOBISIA Creative Coding Challenge Excellent Level (2017)

General

- University of North Carolina at Chapel Hill Dean's List (2023) [web]
- University of Florida Dean's List (2019 & 2020)
- AP Scholar Award (2018 & 2019)

INTERNSHIP EXPERIENCE

VisionX LLC *Remote*

Summer Intern: Software Engineer on Computer Vision *Jun 2022 - Aug 2022*

- Developed OpenCV algorithms for image preprocessing (noise removal, color filtering, and contrast enhancement) and contour finding to extract medical information from infusion bag images
- Designed a GUI application with image enhancement, contour finding, and liquid area calculation functionalities

SI-TECH Co. Ltd *Beijing, China*

Summer Intern: Software Engineer on Algorithm *May 2021 - Aug 2021*

- Designed and integrated server-side databases using SQL with React-driven front-end Bootstrap pages
- Deployed database caching, Nginx proxy, and weighted round-robin strategies to mitigate data corruption issues

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SKILLS

Programming Languages: Python, Java, C++, MATLAB, R, Shell, HTML & CSS, Assembly (MIPS), Mach-O Assembly, UEFI

Frameworks and Tools: Tensorflow, Pytorch, scikit-learn, numpy, openCV, Google Cloud Datastore, AWS Cloud, Kubernetes, GitHub