

# RESUME

# SHENGZHI WU

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## EDUCATION

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**University of Science and Technology of China (USTC)**, Anhui, China      Aug. 2017 – Jul. 2021

B.S. in Mathematics and Applied Mathematics, GPA:3.33/4.3, GPA (CS Courses) : 3.7/4.3

Coursework: Differential Equations, Computer Programming, Data Structures and Database, Graph Theory, Functional Analysis, Probability Theory, Topology, Quantum Mechanics

**National University of Singapore (NUS)**, Singapore      Aug. 2023 – Present

Master in Mathematics

Coursework: Computational Mathematics, Representation Theory, Riemann Surface, Algebraic Geometry

## RESEARCH EXPERIENCES

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**School of Mathematical Sciences, USTC**

Jul. 2021 – Jun. 2023

*Research Assistant* Professor: Wuqing Ning

- Developed a numerical method for searching symmetric N-body periodic solutions.
- Developed a Cayley graph based form-finding method for symmetric tensegrity searching.
- Developed shear-bend translating metamaterials, which can be used in soft robots and smart clothing.
- Developed an audio generation software system, named Audio Creator, that can be used for producing sound effects and acoustic research.

**CAS Key Laboratory of Microscale Magnetic Resonance, USTC**

Dec. 2021 – Jun. 2023

*Research Intern (Part Time)* Professor: Dong Liu

- Developed an economical measure system (costing as low as \$10) and an effective algorithm in the field of electrical impedance tomography (EIT) and accomplished real-time (10 Hz) image reconstruction. The system has potential to be developed into a wearable device.
- Developed a python package, pyEIT, for EIT research and application, which contains advanced mesh generation algorithm for FEM and efficient inversion methods. It is a very meaningful contribution to the community. The package is planned to release in the future.
- Developed a Poisson distribution based adaptive depth neural network.
- Made an algorithmic progress in Inversion Algorithm of Lunar Magnetic Dipole.

## PUBLICATIONS

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- Simple, Fast and Flexible Numerical Methods to Obtain Symmetric Periodic Solutions of the N-Body Problem (plan to publish in future)  
My contributions: all main work

- Observation of single magnetic grains in Chang'e-5 lunar samples (submitted)  
Journal: Science Bulletin  
My contributions: participation in development of the magnetic dipole inversion algorithm
- Burn after read: a rewritable multiplexing optical information storage and encryption method 2023 (preprint)  
My contributions: participation in development of the image processing algorithm

## SKILLS

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- Programming Languages: Java, Python, JavaScript, Wolfram language, C and GLSL (more than 40k lines of code wrote totally)
- Development: scientific computation, physical simulation, desktop, Android, web and embedded system
- CG / CAD softwares: Photoshop, Grasshopper, Houdini, Blender, Unity 3D, Substance Designer