

JINGYI LI

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QUALIFICATIONS

- **Computer Science**: Software Development | Cloud Computing | Distributed Software Systems | Blockchains & Smart Contract | Database Design, Implementation & Maintenance | Automation | Full-Stack Development | Machine Learning | Natural Language Processing | Automated Testing | DevOps | Computer Vision | Computer Graphics
- **Geospatial Technologies**: Geospatial Analytics (ESRI) | GIS Web Development | Spatial Database & ETL | Data Viz
- **Technical Support & Consulting**: Stakeholder Outreach | Community Engagement | Customer Communication | Financial Analysis | Multidisciplinary Teamwork | Cross-Cultural Collaboration

SKILLS

Programming Language: C/C++, Python, Java, Javascript, NodeJS, Solidity, Bash, HTML, CSS

Cloud Platforms: Google Cloud Platform, Azure

Database: PostgreSQL (+PostGIS), MySQL, MongoDB, Key-Value Store

Geographic Information System: ESRI ArcGIS Pro & Online, ArcGIS Storymap, Survey123

General: Qt Creator, Docker, VMware, Git & Github, Microsoft Office Suite, Adobe Creative Suite

EDUCATION

University of Pennsylvania, Stuart Weitzman School of Design, Philadelphia, PA Aug 2023

Master of Science in Historic Preservation

- **Courses in Engineering**: CIS5050 Software Systems | CIS5480 Operating Systems | CIS5530 Networks Systems | CIS5800 Machine Perception | CIS560 Interactive Computer Graphics | CIT590 Program Languages and Techniques | MUSA611 Javascript Programming | ENVS570 Modeling Geographic Space

Harbin Institute of Technology, School of Architecture, Harbin, China Jun 2020

Bachelor of Architecture ([Architecture Portfolio](#))

EMPLOYMENT

Department of Computer & Information Science, Penn Engineering, Philadelphia, PA Present

Summer Research Intern at NetDB@Penn, Teaching Assistant (CIS5050 Software Systems)

- Researched SQL query optimization for cloud-native distributed relational databases and automated the benchmark evaluation for a paper submitted to The Conference on Innovative Data Systems Research (CIDR).
- Assisted students in distributed systems programming in C/C++ (debugging, troubleshooting, and providing technical solutions & support).

Department of City Planning, Stuart Weitzman School of Design, UPenn, Philadelphia, PA Sep 2022 - May 2023

GIS & ML Research Assistant, Teaching Assistant (Cloud Computing & Javascript Programming)

- Developed a typology for using ML & GIS to map the longitudinal pathways of neighborhood changes.
- Coordinated in-class collaboration projects; configured cloud infrastructure; established CI/CD for assignment submission and automated query testing (Jest) on GitHub Actions; and assisted in troubleshooting GIS full-stack web dev, ETL scripting, and SQL queries.

Astoria AI Inc, New York, NY Jun 2022 - Aug 2022

Software Developer Engineer Intern (Remote)

- Developed a prototype for a customer service chatbot; deployed applications on Azure.
- Automated public-sourced data harvesting and analysis.

Center for Architectural Conservation (CAC), UPenn, Philadelphia, PA Apr 2022 - May 2023

GIS Intern

- Provided technical support for a hydrology analysis of earthen walls using GIS technologies; communicated and presented technical results to non-technical audiences and clients.
- Created a [website](#) for a CAC project to increase its public presence and enhance community engagement.

PROJECTS in GIS

- **A Prototype of a Full-Stack App for Community-Centered Preservation** ([Webpage](#), [Github](#))
 - Full-stack web programming and API development, and working with cloud databases.
- **Mapping the Flood Susceptibility for Historic Properties and Districts in Philadelphia** ([Report](#))
 - Used ArcGIS Pro to conduct hydrological analysis for city-wide properties
 - Used Model Builder for workflow automation.
- **A Grading System of Locating a Community Garden in Rio de Janeiro, Brazil** ([Report](#))
 - Used census, transportation, topography, and water data to analyze location in ArcGIS Pro.
- **Frontend GIS Web App: Filtering Preservation-Related Spatial Database of Philadelphia** ([Github](#))
 - Used HTML, Javascript, CSS, and Leaflet to load, process, and visualize GeoJSON data.
- **Philadelphia Computer-Assisted Mass Appraisal - A Cloud Computing Full-Stack App** ([Github](#))
 - In-class collaboration project for property assessors and owners in Philadelphia to view property assessment data and the trending of property prices.
- **Revitalizing Carbondale - A Community-Centered Preservation Plan** ([Report](#))
 - Mapped the urban development in ArcGIS Pro and developed a community-centered revitalization plan for the city. Composed a report (InDesign) and created graphics (Photoshop & Illustrator) for presentation.

PROJECTS in CS

- **Penn Cloud - A Cloud Platform Supporting Webmail and Storage Services** ([Github](#))
 - Programmed a scalable distributed key-value pair database server in C & C++ (3 groups of servers, 3-node replication per group). Implemented load balancing, data partition, replication, fault tolerance, scalability, consistency, and leader election among nodes.
- **PennOS: Implementation of a User-level Unix-like Operating System**
 - I programmed the entire file system and created user-level functions to integrate with the shell.
- **SMTP and POP3 Email Servers Implementation for a Real Email Client**
 - Built two multithreaded servers implementing the SMTP & POP3 protocol for sending and receiving emails. The servers support both local and non-local users.
- **A Mini Minecraft Game from Scratch** ([Demo](#))
- **Mini Maya From Scratch** ([Demo](#))
- **Master Thesis: The Study on the Differences between NeRF and Photogrammetry and on the Possibility of Using NeRF as an Alternative to Photogrammetry in the 3D Reconstruction of Heritage Sites.**
- **Online Course - Algorithms** (Coursera, Princeton University)
- **Online Course - The Web Development Bootcamp** (Udemy)

COMMUNITY OUTREACH

The Penn Preservation Student Association (PPSA)

- Advocated for students' interests, engaged with faculty, and fostered a sense of community.
- Composed funding applications and plans; held regular meetings; brought speakers to campus; and collaborated with the School to organize events including alumni talks, movie & game nights, potlucks & picnics, etc.