









# Mark J. Lucernas *Software Engineer*

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 github.com/marklcrns    U.S. Navy

## PROFESSIONAL EXPERIENCE

- Junior Software Systems Engineer, TrustThink**  Jul 2024 – present
- Architected scalable global network topology simulation using Docker and GNS3, reducing setup time by 70%
  - Developed testbed for dynamic discovery of encryptor devices, enhancing real-world network simulations
  - Engineered network protocols simulation for encryptor devices, enabling testbed operational management and monitoring
  - Lead research on operational management and dynamic discovery approaches for ECU/HAD cryptographic devices
- Software Engineer Intern, UCSD DERConnect**  Aug 2022 – Sep 2024
- Spearheaded the development of a university-wide internal web app, boosting operational efficiency by 50%
  - Optimized web app backend database operations, increasing API throughput by 6000%
  - Implemented test automation strategies, significantly enhancing software reliability and reducing bug detection time
  - Engineered automation solutions for QR code generation and dynamic CSV creation, saving 100+ manual labor hours
  - Authored comprehensive frontend and backend documentation used by 100% of the internal web app developers.

## TECHNICAL SKILLS






**Methodologies:** Object-Oriented Programming, Web Development, RESTful APIs, Agile Project Management, Scripting, MVC Design Pattern, Computer Networking, Systems Design, Data Analysis, Scripting

**Programming Languages:** Python, JavaScript, Java, C/C++, TypeScript, HTML, CSS, Bash/Sh


**Libraries and Frameworks:** React.js, Vite, Next.js, Node.js, Neo4j, Material UI, Jest, Bootstrap, D3.js, Tailwind CSS, SQL, InfluxDB, jQuery, Three.js, MongoDB


**Development Tools:** GitHub, Linux/Unix, Vim/Neovim, VS Code, Copilot, LLM, Docker, GitHub Actions, GNS-3, Postman

## PROJECTS

- Fortune Telling Web App, Team Lead** 
- Led frontend development for Fortune Telling Web App at UCSD. Managed full-stack development, achieving top-rated UI design and recognition as a leading project in Spring 2023 cohort.
- 3D Website** 
- Developed a 3D responsive portfolio website using React.js, Three.js, Vite, and Tailwind CSS, showcasing technical skills and project portfolio in an interactive and visually appealing way.
- Zettelkasten Blog** 
- Developed Zettelkasten blog with 3D visualization of post connections. Integrated RSS and comments section. Authored 100+ educational posts, demonstrating web development, data visualization, and technical writing skills.
- Mininet Router** 
- Implemented a basic router that simulates protocols such as Ethernet, ARP, IP forwarding, and ICMP support. Demonstrated networking and low-level programming skills.
- Game of Generals** 
- Developed board game with LibGDX library, featuring AI adversary and multiplayer. Demonstrated game development, AI, socket, and cross-platform Java programming.

## EDUCATION

**University of California - San Diego,**  
*Bachelor of Science in Computer Science*   
Sep 2022 – Dec 2024 | San Diego, United States  
GPA: 3.5

**San Diego Community College District,**  
*Associate of Science in Computer Science*   
Sep 2019 – May 2022 | San Diego, United States  
GPA: 3.92

## AWARDS

**Provost Honor, University of California - San Diego**  
2024

**High Honors, San Diego Community College District**  
2022

**Dean's List, San Diego Community College District**  
2022