Mohan Atkuri

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Education

- **University of Minnesota Twin Cities** — Minneapolis, MN
  Post-Secondary Enrollment Options (PSEO) — *Sept 2025 – Present*
  Coursework: *STAT 3021 (Intro Probability & Statistics), CSCI 1913 (Intro Algorithms & Program Development), GCD 2171 (Stem Cells in Biomedicine), PHIL 3305 (Medical Ethics), MGMT 5102 (StartUp: Customer Development/Testing), Guitar History*
  Roles: *PSEO Student Association Board Member; UMN Surgery Lab Floor Member (11-Moos); MN Cup Competitor (Semifinalist)*
- **Wayzata High School** — Plymouth, MN
  High School Diploma (Expected 2026) — *Sept 2022 – Present*
  Coursework: *AP Biology, Genetics (North Hennepin CC), AP Computer Science A, AP Statistics, AP Calculus AB/BC, AP Physics C, AP Spanish, AP US History, AP Literature*
  Honors: *National Merit Finalist, Wharton Data Science Competition, HOSA Biotechnology National Qualifier, SkillsUSA Urban Search and Rescue State Champion, Gold Presidential Volunteer Service Award, AP Scholar with Distinction, Spanish Gold Bilingual Seal*
- **North Hennepin Community College** — Brooklyn Park, MN
  PSEO Student — *Jan 2025 – May 2025*
  Coursework: *BIOL 2360 Genetics (upper-level), ENGL 1201 College Writing I*

Skills Summary

- **Programming**: Python, R, JavaScript/TypeScript, Java, SQL, Bash
- **Web / Full-Stack**: HTML5, CSS3, modern JavaScript (ES6+), React, Next.js, React Native, Node.js, REST APIs
- **Data & Bioinformatics**: R (tidyverse, Bioconductor), microbiome analysis (shotgun & 16S), Python (pandas, NumPy, scikit-learn), statistical modeling
- **Databases & Cloud**: Firebase (Firestore/Auth), Supabase, MongoDB, PostgreSQL, AWS EC2, Vercel, Git/GitHub
- **Practices**: Linux/Unix development, testing/debugging, basic web performance and accessibility

Experience

- **Staley/Jahansouz Lab** — Minneapolis, MN
  Student Microbiome Researcher — *Jun 2025 – Present*
  - **Canine lymphoma/sarcoma microbiome study**: Lead data analysis for canine stool lymphoma/sarcoma study, focusing on associations between gut bacteria and cancer progression.
  - **R pipelines for metagenomics**: Develop R pipelines for shotgun and 16S sequencing using Bioconductor and mothur to process, quality-filter, and visualize microbiome data.
  - **Statistical analysis in Python**: Use Python for statistical analysis and data manipulation to integrate metagenomic datasets and identify taxa associated with disease status.
- **Biocartesian** — Remote
  Spectroscopy Modeling Intern — *Summer 2025*
  - **Fluorescence microscopy simulation**: Built simulation tool to calculate fluorophore bleed-through risk, modeling light overlap and detection interference for multicolor imaging.
  - **Production web application**: Deployed simulation as a production web application for the R&D team, enabling rapid analysis of fluorophore combinations and saving hours of manual analysis.
- **Hindu Society of Minnesota** — Maple Grove, MN
  Business and IT Systems Analyst — *Mar 2023 – Dec 2025*
  - **Automated tax receipt system**: Built Python, PySimpleGUI, and MongoDB-based system integrated with Google APIs to generate and email IRS-compliant annual donation statements at scale.
- **Trojan Robotics Team 2264, FIRST Robotics Competition** — Plymouth, MN
  Software Team Member — *Oct 2023 – Oct 2025*
  - **Autonomous vision and control**: Designed and deployed autonomous routines and a vision pipeline for game pieces, increasing auto-mode reliability in competition.

Projects

- **MNClubConnect.com (Full-stack, Web)**: Built a full-stack club discovery platform serving 3,500+ students with real-time search and filtering to improve campus engagement across institutions. Tech: Next.js, TypeScript, Tailwind CSS, Firebase, Prisma, Vercel, GitHub Actions.
- **T167R Mutation in GuuH (Enzyme structure–function analysis)**: Designed and generated a T167R site-directed mutant of guanylurea hydrolase to study impacts on specific activity and wastewater bioremediation potential; used protein structure modeling (ChimeraX), primer design, PCR, and *E. coli* transformation to obtain validated mutant plasmids for future enzyme assays.
- **Financial Yearly Reports Sender (FYRS) (Automation, Python)**: Engineered an automation tool for a 501(c)(3) nonprofit to generate and distribute IRS-compliant donation statements to an unlimited donor base. Tech: Python, Tkinter/PySimpleGUI, MongoDB, Google OAuth.