Madhav Anand Menon

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Education

University of Illinois Urbana-Champaign Expected May 2028

B.S. Computer Science and Physics; Minor in Mathematics **GPA: 3.95/4.0**

- Illinois Engineering Outstanding Scholarship Awardee; James Scholar Honours Student; Dean's List; Tau Beta Pi Engineering Honours Society Inductee
- Relevant Coursework: Data Structures, Linear Algebra, Computer Architecture, Discrete Maths (Upcoming: Stochastic Processes, Numerical Methods, Machine Learning, Databases)

Experience

Disruption Lab Feb. 2026 -

Software Engineer Champaign, IL, USA

- Agentic AI for Learning

DigiAlert Jun. 2025 - Aug. 2025

Software Engineer Intern Remote

- Developed Flask-based AWS CSPM to visualise security metrics from 4 AWS services using Chart.js—reduced CSPM costs by 45%
- Engineered data pipeline using boto3, threading, and subprocess management to fetch, process, and cache security metrics and 500+ CloudTrail events (per refresh) with real-time CIS v5.0.0-based risk classification
- Used REST APIs and nginx/gunicorn to integrate dashboard into internal system; enabled multi-account AWS access via .env credentials and time-based invalidation cache management

Siebel School of Computing and Data Science Feb. 2025 - Present

CS 124 Honours Project Manager Champaign, IL, USA

- Mentor students to design and implement a novel machine learning project, guiding problem formulation, model selection, and evaluation
- Lead weekly team meetings to review project updates, discuss challenges and foster collaborative problem-solving
- Conduct weekly office hours on fundamental development practices (Git, command-line) and ML algorithms
- Inducted into the CS 124 Honours Hall of Fame (Sp. 2025)

Projects

Computational Astrophysics Research Project | *CLASS, SciPy, Matplotlib, pandas*

- Collaborated with UCI Postdoc and simulated ΛWDM neutrinos and investigated their breaking point and free-streaming length using the Cosmic Linear Anisotropy Solving System
- Developed algorithm for data processing and fitting through Boltzmann-solvers reducing processing time by 15%
- Computed power-matter spectrum of a primordial universe and fitted transfer function to an error of 4%
- Presented findings on ability of simulated structures to resolve dwarf-galaxy distribution disparities between N-body simulations and experimental observations

Accuracy of First-Order Numerical Approximations | *PySpice, NumPy, Matplotlib*

- Utilised Laplace Transforms and PySpice to obtain and verify the analytic solution to inhomogeneous RL circuit differential equation
- Implemented Euler's method in Python and approximated solutions over 50 timesteps, averaging 0.091% error
- Authored paper with mathematical proofs, diagrams and code-blocks summarising results

OCR System | *PyTorch, pandas, NumPy, Matplotlib*

- Collaborated with seven people to create a segmentation-based CNN to recognize Latin text with 98% accuracy
- Implemented denoising, skeletonisation and skew-correction algorithms to pre-process input data
- Achieved a loss of 0.0132 on IIIT-5K dataset after 13 epochs

Skills

Languages: Python; C; C++; JavaScript; SQL; Verilog; MIPS Assembly; HTML; CSS
Libraries and Frameworks: PyTorch; FastAPI; Flask; pandas; scikit-learn; NumPy; Matplotlib; SciPy; Seaborn; ReactJS; Catch2; Mocha, Bootstrap; Tailwind
Tools: AWS; Azure; GCP; Git; TeX/LaTeX; Docker; Valgrind
Other Activities: TEDx Speaker; ACM Corporate Team Member