Chinmay Mangalgi

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected May 2027**
B.Sc. in Mechanical Engineering, Minor in Dyson Business for Engineers
Relevant Courses: Statics, Thermodynamics, Differential Equations, Linear Algebra

EXPERIENCE

Emerson Machine Shop Learning Studio Crew, Cornell Dept. of Mechanical Engineering **Aug. 2024- Present**
- Implemented a tracking system for equipment usage and maintenance, decreasing downtime by 15%.
- Trained and mentored a team of 10+ students in machining and safety protocols, reducing usage-injuries by 12%.

Undergraduate TA, Cornell Dept. of Physics **Jan. 2024- May 2024**
- Assist graduate TAs and faculty in leading biweekly discussion sections for freshman/sophomore level physics classes.
- Collaborate with faculty to improve instructional methods, improved student exam scores by 6% on average.

Lead Math Tutor, Mathnasium **Aug. 2022- May 2023**
- Developed and implemented tutoring strategies that helped over 150 students improve their math proficiency, resulting in a reported average grade increase of 6%.

RESEARCH EXPERIENCE

Andarawis-Puri Lab, *Undergraduate Researcher,* Cornell University **Aug. 2024- Present**
- Conducted stress-strain and fatigue tests to analyze tendon biomechanics, contributing to a comprehensive study on tissue response.
- Assisted in the design of experiments which improved testing efficiency by 20%.
- Utilized CAD software to design novel apparatus for rotator cuff tendon testing, enhancing test precision and reliability.

Students Taking Advantage of Research (STAR) Lab, *Lead Researcher,* University of Arizona **Aug. 2022-May 2023**
Molecular Docking Comparisons of ERp57 To Generate Potential Amyloid-β_{42} Binders in silico
- Analyzed the feasibility of engineering ERp57, a natively occurring protein in cerebrospinal fluid, as a therapeutic avenue for preventing amyloid plaque formation and progression of Alzheimer's disease.
- Used Python, Molecular Operating Environment for Site Finder analysis to identify optimal docking sites on ERp57 for ligand interaction with $A\beta_{42}$, offering a novel design strategy for protein therapeutics.

PERSONAL PROJECTS

Amateur Racer and Self-Taught Mechanic **Apr. 2020- Present**
- Enhanced car and motorcycle performance via DIY modifications, averaged 6-8% increase in horsepower.
- Earned racing license, participated in an amateur racing series as a driver.
- Performed routine maintenance on my car and motorcycle in my free time.
- Used Fusion360 to create winglets that improved downforce at high speeds by 8%.

SPECIALIZED SKILLS

Programs: Word, Excel, R, ChimeraX, Molecular Operating Environment, Python, Fusion360 (CAD)**,** Powerpoint