

Elvio A. Sadun

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EDUCATION

Massachusetts Institute of Technology (MIT) | Cambridge, MA Graduated June 2006

Bachelor of Science in Aeronautics and Astronautics (XVI-2), Bachelor of Science in Physics (VIII)

- Extensive coursework in advanced physics, as well as subjects in differential equations, linear algebra, statistics, structural analysis, materials science, thermodynamics, artificial intelligence, algorithms, and control theory
- Several engineering competitions involving mechanical design, fabrication, optical machine intelligence, control systems, and path planning

WORK EXPERIENCE

Mt Baldy Ski Lifts, Inc. | Mt Baldy, CA December 2022 – present

Engineer

Worked to troubleshoot and maintain chairlift drive systems, including the fault sensing equipment, custom drive panels, and all mechanical components. Fixes often required fabrication of new parts. Implemented a remote microprocessor infrastructure for monitoring systems across the resort. Conducted analysis, calculations, and preliminary planning for a new chairlift installation.

Freelance at Higher Ground, LLC | Monrovia, CA (fully remote) February 2022 – June 2022

Engineer

Worked on the development of a geosynchronous orbit satellite communication device and associated mobile apps, providing connectivity for off-grid users. Helped to re-engineer the existing production system to make it more modern, scalable, and secure, while supporting all infrastructure necessary for search and rescue, maps, weather, and messaging other users.

Freelance at Toofon, Inc. | Pasadena, CA June 2021 – December 2021

Lead Mechanical, Electrical Engineer

In charge of team overseeing all mechanical and electrical elements in the design, fabrication, and testing of a novel heavy-lift drone. Coordinated with respective heads of the aeronautics team as well as that of controls software team to engineer prototypes. Acted as point of contact with any outside testing and fabrication resources, such as machine shops.

3 Legged Dog, Inc. | Glendale, CA 2011 – 2020

Software Engineer

Developed internal enterprise-ready applications for media companies (including Disney, Sony, Fox, Warner Bros., LA Rams, and Viking Cruises). Integration with existing Java and .NET project environments. Designing schemas and system architectures from scratch, cognizant of security, scalability, and performance. Making backend web services, database-driven scheduled processes, and responsive mobile-ready webapps. Writing native applications for iOS. Comfortable working rapidly in small teams and alongside clients, using Agile practices with a sprint schedule. Have acted as team leader to manage multiple developers and designers, coordinating directly with product stakeholders.

OTHER WORK

Ad Astra School at SpaceX (now Astra Nova School) | Hawthorne, CA 2015 – present

Instructor

Teacher since inception at experimental full-time school for the children of SpaceX employees. Created curriculum and instructed courses in aerodynamics, Earth science, computer science, and engineering. Led groups of elementary, middle, and high school-aged children in classroom experiences that center on critical analysis and problem solving.

Cincinnati Museum Center women in STEM program | Monrovia, CA (fully remote) November 2019

Organizer

Partnered with Proctor and Gamble to host a multiday space-themed seminar to encourage women's participation in STEM fields. Led the design and construction of a custom mechanism to simultaneously launch all 200 of the students' model rockets as the event's finale. There are plans to replicate the program internationally (currently on hold for COVID). See media coverage at: <https://bit.ly/2YEgWAI>

USC engineering summer program | Los Angeles, CA

August 2018

Organizer, Instructor

Helped to design and teach a summer program for gifted high school students in conjunction with USC's Viterbi School of Engineering. Students in the program constructed internet-connected hardware prototypes of novel products of their own design.

Startup development | Los Angeles, CA

2009 – 2012

Co-founder

As co-founder of *Vizzario Labs*, designed and developed an iPad game (including all digital assets and 2D animations) in conjunction with neuro-ophthalmologists to help identify and mitigate particular eye disorders. As co-founder of *NearBuy Network*, designed and developed an iPhone application and backend that empowers users to download rewards and coupons near out-of-home advertising. As co-founder of *Social Register*, designed and developed a web application platform designed specifically for small businesses to complement their point-of-sale systems.

TECHNICAL RESEARCH AND PROTOTYPING EXPERIENCE

- Consulted with a diagnostic medical device startup out of USC's Viterbi School of Engineering on design tradeoffs and legal strategies.
- Created prototype software as a contract developer for USC's Keck School of Medicine
- Developed software and prototype hardware for medical testing of astronauts through USC's Keck School of Medicine and NASA. Listed as inventor on a patent of same.
- Performed NASA acceptance tests on pressure transducers with the MIT Physics Department for elements of the Alpha Magnetic Spectrometer II deployed on the International Space Station. Wrote custom software to log data for same.
- Generated visual processing software for a retinal implant system for the blind created by Second Sight, LLC and USC's Keck School of Medicine
- Did computer science research with a PhD candidate at the California Institute of Technology (Caltech) on visual recognition systems based on a nonlinear dynamic system. Authored a published paper on same.
- 3D modeling and deposition printing, laser cutting and engraving, vinyl cutting, welding, machining, woodworking

DIGITAL PROFICIENCIES

- Extensive programming in C, C++, Objective C, C#, Swift, Python, Java (Swing/Spring/Hibernate), JavaScript (jQuery/AngularJS/React frameworks), HTML5, CSS, PHP, Scheme, Pascal, MATLAB, Ada95, and Visual Basic
- SQL and noSQL (MongoDB and SPARQL), GraphQL, Git, Subversion
- AWS technologies, including EC2, S3, Lambda, and SQS
- Docker, infrastructure as code, CI/CD tools
- Agile methodologies including acting as a scrum master, Jira
- Comfortable working in Unix/Linux, Windows, macOS
- Visual Studio Code, NetBeans, Eclipse, Xcode, LaTeX, SolidWorks, CAD, Adobe Suite, and Microsoft Office Suite

COMMUNITY INVOLVEMENT, EXTRACURRICULAR ACTIVITIES, AND INTERESTS

Hackathons, trail running, ultramarathons, various intramural sports, recreational sailing, skiing, hiking, cycling, woodworking, machining, animatronics	Current
Los Angeles and Minneapolis Ultimate Frisbee leagues, MIT Men's Ultimate Frisbee Team	2001 – 2010
UMN Men's Club Water Polo Team (Competed at the Club Nationals Tournament)	2006 – 2007
Instructor for MIT's Autonomous Robot Design Competition	2005
UMN Law student musical (TORT)	2007, 2009
Mentor (volunteer) at the MIT/Cambridge Science Expo	2002 – 2005
Part of team to fabricate, weld, and deploy novel grain husker to rural tribes in Africa	2002