Sana Pournaghshband

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EDUCATION

Georgia Institute of Technology - Atlanta, GA *Anticipated Graduation Date: May 2018*

- Candidate for Bachelor of Science in Biomedical Engineering
- Pre-Medicine Track
- Dean's List

Georgia State University - Perimeter College - Dunwoody, GA *Aug 2014 - May 2016*

- Engineering, Biology
- GPA: 3.82, Dean's Honor List

RESEARCH EXPERIENCE

Undergraduate Research Assistant at Hu Lab at Georgia Tech *Jan 2017 - Present*

- Designing soft robotics inspired by elephant trunk and investigating their kinematic and dynamic properties
- Generating new ideas for designing dexterous and powerful soft grippers using effective strategies used by elephant trunk
- Utilized FaroArm Scanner, Fusion 360 and 3D printing to develop Bio-Inspired prototypes under advisement of Dr. Hu

Active Galactic Nuclei (ANG) Student Researcher *Jan 2015 - May 2016*

- Involved the study of quasars, galaxies that host supermassive black holes (SMBH) in their cores that are currently surrounded by a disk of ionized gas
- Analyzed the different light spectra of active galactic nuclei (AGN) to observe any unusual activity of the absorption lines
- Measured the relative quantities of the species to determine the energetics of the winds under advisement of Dr. Dunn

PROJECTS

Georgia Institute of Technology (Sponsored by TightLine Development)

Senior Design: Redesign of Orthopedic Slap Hammer System Used in Revision Total Hip Arthroplasty

- Designed a beyond traditional systems by utilizing a spring compressed with an electric drill to increase both force generation and variability
- Conducted rigorous user needs research and thorough patent review
- The one spring uniformly compresses and decompresses leading to maintain the desired axial force output
- Spring-powered design allows for a built-in force variability feature based on the compression of the spring
- Tested prototypes to ensure desired force output using industrial force sensor, Instron

Helping Hand

- A mechatronic hand exoskeleton that helps individuals with neurological injuries relearn fine motor skills in the hand
- Provides a motor assist to help complete a physical therapy exercise
- Inexpensively made from common household objects and 3D printed fingers
- The goal was to make the product as portable and affordable as possible

EXPERIENCE

Math, Science, and Engineering Tutor - Dunwoody, GA *Jan 2017 - Present*

- Helping students with coursework and test preparation at Georgia State University Learning and Tutoring Center

Prototyping Instructor in Invention Studio at Georgia Tech - Atlanta, GA *Jun 2017 - Present*

- Training new or inexperienced users on the equipment and ensuring the safety of everyone in the space
- Giving tours of the space and teaching workshops on specific projects
- Advise ideation, prototyping, and manufacturing techniques for Georgia Tech affiliates

Cardiac Nursing Unit Volunteer at Grady Hospital - Atlanta, GA *Jul 2017 - Present*

- To supplement patient care and assist the hospital personnel for 4 hours a week at Telemetry Nursing Unit of Grady Hospital

BME Design Shop Instructor in Department of Biomedical Engineering at Georgia Tech, Shop Hand *Dec 2017 - Present*

- Maintaining equipment and helping students create pieces for use in projects and research
- Holding 5 hours a week training sessions to teach students how to use shop equipment
- Assisting with the use of the machines and tools in the shop and also teach their proper and safe use

Summer Intern - Tehran, Iran *Jun 2015 - Aug 2015*

- Cooperated with the University of Tehran Consultation Center on a full-time basis
- Provided support services for clients and participating in community-oriented intervention plans

SKILLS

- **Instrumentation:** Rapid Prototyping, 3D Printing, Milling, Soldering, Band Saw, Laser Cutter, Waterjet, Electronics, Wood and Metal Lathe, 3D Rendering, Shop Tools
- **Mechanics:** Statics, Kinematics, Biomechanics, Biotransport
- **Computer:** MATLAB, SolidWorks, Inventor, Fusion 360, AutoCAD, Python, C Programming, HTML with CSS, SQL, Linux (limited), Microsoft Office, IDL Programming, Mathematica

- **Languages:** English (Fluent) and Persian/Farsi (Native)

LEADERSHIP

Georgia Iranian Student Organization Executive Board Member *Sep 2016 - Present*

- GISO is a non-political, non-religious organization dedicated to serve Iranian students who are studying in Georgia
- To Provide family connection, career services, networking, community service opportunities and enriching students' lives.

Iranian Student Association(ISA) at Georgia Tech Board member *Jun 2017 - Present*

- To promote the Iranian culture among GT students and greater Atlanta area
- To provide a central meeting place for GT affiliated people who are interested in Iranian people and its culture

Star House Project Leader *Aug 2014 - May 2016*

- Taught elementary students Astronomy and Physics in theory and in fun practical hands-on experiments biweekly

Executive Vice President *Aug 2015 – May 2016*

- Held 5 office hours per week
- Led and worked on SGA initiatives such as providing solar-powered picnic tables for campus

Senator *Jan 2015 - Aug 2015*

- Assisted SGA sponsored activities and participated in college and campus leadership programs
- Served on SGA committees and as voting member of the SGA