

# Jossue Sarango

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## EDUCATION

### New Jersey Institute of Technology

Bachelor of Science in Mechanical Engineering, GPA: 3.4

Newark, NJ

Expected: May 2028

**Relevant Coursework:** Kinematics of Machinery, Engineering Design, Dynamics, Mechanics, Differential Equations, Calculus III

## EXPERIENCE

### Chassis Subteam Member - Vehicle Systems Engineering

Sep 2025 – Present

Baja Society of Automotive Engineers (SAE) at the New Jersey Institute of Technology

Newark, NJ

- Performed 12+ FEA iterations analyzing roll cage under front/side/rear impact loads (15g, 10g, 8g), identifying stress concentration points that enabled 12% weight reduction while maintaining 1.5x safety factor and meeting SAE competition requirements.
- Resolved suspension-chassis conflict through dynamic load analysis of 8 mounting point configurations, preventing frame cracking failure mode with predicted 85% failure probability at 3g lateral loads.

### External Affairs Intern (Regional Public Affairs Team)

May 2025 – Aug 2025

PSEG (Public Service Enterprise Group)

Trenton, NJ

- Engineered an automated data consolidation system using Excel (Advanced formulas, Power Query, conditional logic) to collect 200+ data points across 70+ municipalities, reducing manual report time by 95% and enabling same-day response to elected officials.
- Emergency Weather Response Protocol: Developed a standardized communication framework serving 2.4M electric and 1.9M gas customers that reduced the response time of municipal leaders by 85% during severe weather events affecting 100K+ customers.
- Created project tracking dashboard using Excel and PowerPoint to monitor electrical substation and 69kV circuit infrastructure projects, streamlining data workflow for cross-functional teams.

### Webmaster & Software Developer

Sep 2025 – Present

Society of Hispanic Professional Engineers (SHPE) at the New Jersey Institute of Technology

Newark, NJ

- Led the digital transformation for an 80+ member organization by architecting and deploying a modern React/Next.js website, improving page load speeds by 70% and increasing mobile responsiveness to 98% compatibility.
- Organized digital infrastructure by restructuring 500+ Google Drive files and implementing Discord server permissions for 200+ members, reducing new member onboarding time by 60% and eliminating recurring access support requests.

## PROJECTS

### Autonomous Robot Navigation Simulator | Python, NumPy, Matplotlib, System Modeling

Oct 2025

- Developing object-oriented Python simulation framework implementing pathfinding algorithms (A\*, Dijkstra) and obstacle avoidance logic for autonomous robot navigation, utilizing NumPy for efficient matrix operations and Pygame for real-time visualization.
- Building modular architecture with configurable sensor models (LiDAR, ultrasonic) and physics engines to simulate real-world systems.

### Linear Actuator Driven Hand Prosthetic | SolidWorks, CAD, FEA, Ultimaker Cura, 3D Printing, Testing

Dec 2024

- Designed 15-component prosthetic hand assembly through 8 CAD iterations using FEA, achieving 45N finger joint capacity with 1.8x safety factor while optimizing 3D printing parameters to reduce material usage by 22% and print time by 18%.
- Validated design through 25+ load cycle testing protocol at 10N, 25N, and 40N forces, identifying 3 critical failure modes (joint fatigue, actuator mounting slip, tendon tension loss) and iteratively improving structural integrity to withstand 30N loads.

## LEADERSHIP

### New Jersey Governors Fellow

June 2025 – Aug 2025

Center for Hispanic Policy, Research, & Development (CHPRD) with the State of New Jersey

Trenton, NJ

- Led a 6-person team through an 8-week strategic planning project, conducting 20+ stakeholder interviews and analyzing 5 years of organizational data to develop a HISPA engagement framework projected to expand reach by 40%.

### Information Technology Committee Member

Oct 2025 – Present

American Latino Professionals for America (ALPFA) at the New Jersey Institute of Technology

Newark, NJ

- Supported technical infrastructure for 60+ members, ensuring reliable digital operations for professional development programming.

### FirstGenU Fellow

Sep 2025 – Present

America Needs You with the Morgan Stanley Institute for Inclusion

Remote

- Completed 40+ hours of career readiness and expanded network by 100+ industry connections across finance and technology sectors.

### Outreach Coordinator

Jan 2025 – Present

Transition, Engagement, Access, & Mentorship (T.E.A.M.) with the Educational Opportunity Program

Newark, NJ

- Designed promotional materials and implemented engagement strategies to plan, execute, and promote career development programs.

### HISPA Role Model

June 2025 – Aug 2025

Hispanics Inspiring Students' Performance and Achievement

Elizabeth, NJ

- Served as a role model and mentor for first-generation Hispanic students, navigating college readiness and future STEM pathways.

## TECHNICAL SKILLS

**Engineering Software:** SolidWorks (FEA, Structural Analysis), AutoCAD, CAD Assembly, 3D Modeling/Printing

**Programming Languages:** Python, MATLAB, C++, Java, JavaScript, TypeScript, HTML/CSS

**Technical Analysis:** Finite Element Analysis (FEA), Computational Modeling, System Modeling, Data Analysis, Test Planning

**Engineering Disciplines:** Mechanical Design, Structural Analysis, Systems Engineering, Dynamics, Thermal Analysis, Testing/Validation

**Areas of Interest:** Autonomous Vehicle Systems, Robotics, Embedded Systems, Research & Development, Defense Technology

**Spoken Languages :** English (Native), Spanish (Fluent), Mandarin (HSK 2), Portuguese (Conversational)