

# Forest Song

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<b>Education</b>	<b>Rutgers University, New Brunswick, New Jersey</b> Engineering Honors Academy: Bachelor of Science in Mechanical Engineering, Relevant Coursework: Advanced Engineering Mathematics, Differential Equations, Dynamics, Statics, Introduction to Mechatronics, MATLAB Analysis and Design, Mechanics of Materials, Solidworks, Thermodynamics, Fluid Mechanics, Design of Mechanical Components, Measurements Current Coursework: Heat Transfer, Mechanical Properties of Materials, Aerospace Materials, Dynamic Systems and Control, Honors Engineering Design and Development Cumulative GPA: <b>3.71/4.00</b> . Major GPA: <b>3.83/4.00</b>	<i>Sept. 2016 – May 2020</i>
<b>Research Experience</b>	<b>Rutgers Mechanical Engineering Department, New Brunswick, New Jersey</b> <i>Undergraduate Student Researcher</i> <ul style="list-style-type: none"><li>• Participated in NASA-funded New Jersey Space Grant Consortium research</li><li>• Learned hands-on experience of wiring, circuits, and piezoelectric materials to make doorbell using piezoelectric disks as pulse detectors; powered a stepper motor using potentiometers and Arduino; created 3-D models of indoor courtyard using Mavic Pro Drone and Pix4D modeling software; built kit drone and controlled autonomous flight with Mission Planner</li></ul> <b>Rutgers Mechanical Engineering Department, New Brunswick, New Jersey</b> <i>Undergraduate Researcher</i> (Project: Piezocomposite Propellers for Rotary-Wing Aircraft) <ul style="list-style-type: none"><li>• Studied basics of lift and drag for ornithopters</li><li>• Utilized XFOIL and AVL to perform aerodynamic analysis on airfoils</li><li>• Used MATLAB to automate analysis of ten airfoil geometries and angle of attack</li></ul>	<i>May 2018 – Aug. 2018</i>  <i>Sept. 2017 – Present</i>
<b>Work Experience</b>	<b>Rutgers Makerspace</b> <i>Makerspace Staff</i> <ul style="list-style-type: none"><li>• Assist incoming users with utilizing Makerspace machines for their projects</li><li>• Maintenance and usage of 3D printers, laser cutter, CNC machine, metal shop and woodshop tools</li></ul>	<i>Jan. 2019 – Present</i>
<b>Projects</b>	<b>Mecanum Drivetrain</b> <ul style="list-style-type: none"><li>• Self-designed robotic holonomic drivetrain that runs on Mecanum wheels</li><li>• Mecanum wheel rollers optimized through calculus, which then was imported into Autodesk Fusion 360 to create CAD model, and then was 3D printed</li><li>• Robot controlled remotely through Raspberry Pi and navigates through camera object recognition</li></ul> <b>LivingWaters</b> <ul style="list-style-type: none"><li>• Designed CAD model for Rutgers 2018 Hult Prize team LivingWaters using Autodesk Fusion 360 and water flow simulation using Autodesk 3ds Max</li><li>• Team was named one of the top 50 companies for refugees by the Vatican's official program for promoting social-impact companies</li></ul> <b>Chucky (Table Tennis Robot)</b> <ul style="list-style-type: none"><li>• Self-designed ping-pong ball shooter robot using Autodesk Fusion 360</li><li>• Created <a href="#">finalized model</a> using 3D printing, wood construction, and Arduino</li></ul>	<i>Dec. 2018 – Present</i>  <i>Feb. 2018 – Sept. 2018</i>  <i>May 2017 – Sept. 2018</i>
<b>Skills &amp; Interests</b>	<b>Software:</b> Solidworks, Autodesk Fusion 360, XFOIL, AVL, ANSYS, Microsoft Office <b>Programming:</b> Java, Python, Arduino, MATLAB <b>Machining:</b> Laser Cutter, CNC, Soldering, Woodshop, 3D Printing <b>Languages:</b> English (fluent), Chinese (fluent), Spanish (conversational)	
<b>Distinctions</b>	Dean's List	<i>Sept. 2016 – Dec. 2018</i>