Ryan Christ

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Visit my portfolio: ryanjchrist.github.io

Education

Duke University - Pratt School of Engineering May 2026
Bachelor of Science in Mechanical Engineering - GPA: 3.67 / 4.00 *Durham, NC*
- **Minor:** Electrical & Computer Engineering
- **Relevant Coursework:** Calculus I, II & III, Linear Algebra, Differential Equations, Physics: Mechanics & Electricity and Magnetism, Thermodynamics, Control Systems, Structure/Properties of Solids, Mechanics of Solids (MATLAB), & Dynamics (Python), Chemistry, CS: Data Structures & Algorithms (Java), Mechatronics (Maple/Python/Arduino)

Hilton High School June 2022
GPA: 4.0 / 4.0 *Hilton, NY*
- **Awards:** Valedictory Honors, Academic Merit, Chemistry Achievement Award, MCPSACC Top Scholar Athlete

Experience

Monroe County - Department of Transportation May 2024 – August 2024
Engineering Intern - Highway & Bridge Engineering *Rochester, NY*
- Automated data integration of bridge and culvert reports between SAP software and Excel, utilizing the Command Prompt. Streamlined the inspection and reporting process for 192 bridges and 344 major culverts.
- Calculated moment arms for traffic signal masts, analyzing load factors such as weight, wind, ice, and factors of safety. Ensured compliance with updated engineering standards to maintain structural integrity.
- Redesigned parking lot layout plans on AutoCAD LT ensuring accuracy conforming to design specifications.
- Facilitated and engaged in meetings for planning, programming, and overseeing the design and construction of Capital Improvement highway, bridge, and culvert projects.

Duke Bass Connections - Research April 2024 - Present
Using Drones and Radio Telemetry Systems To Monitor the Health of Endangered Elephants *Durham, NC*
- Manufactured toroidal propellers to measure acoustics levels of various DJI drone models against standard propellers. Used spectral analysis to quantify noise disturbances and optimize UAV strategies for minimal wildlife disruption.
- Tested and aided in developing a laser altimeter for the DJI Air 3, utilizing an Arduino and laser sensors.
- Tested two and three dimensional (drone image data and LIDAR technology) methods of analyzing elephant body conditions.
- Conducted literature reviews and participated in decolonization discussions for international research.

Duke University August 2024 – Present
Teacher Assistant - Mechanics of Solids (EGR 201) *Durham, NC*
- Led labs and discussions to instruct and support students on key concepts, including static force systems, equilibrium, and the mechanical behavior of materials.
- Taught students to apply principles of stress, strain, and material deformation to solve practical engineering problems involving beams, torsion members, and columns.
- Guided students through selected laboratory work, demonstrating the use of a load cell and extensometer to calculate the modulus of elasticity and shear modulus for different specimens.

RJ Christ Excavating & Paving June 2018 - August 2024
Seasonal Construction Worker *Hilton, NY*
- Excavated and installed residential and commercial asphalt driveways.
- Responsible for operating and maintaining a diverse set of heavy machinery including loaders, excavators, backhoes, and pavers.

Projects

3D Printing and Prototyping June 2022-Present
- Designed 3D printed parts to function on commercial equipment at RJ Christ Excavating & Paving to greatly reduce repair costs.
- Modeled families' heads on various figures; Created unique gifts, ie. Spotify Picture Frame using a laser cutter.

Rock Relocation Solution January 2023 - May 2023
- Designed a system with 4 pulleys to significantly reduce the force required to lift and transport the rocks. This setup allowed for precise control and minimized user effort.
- Collaborated with client on factors such as cost-efficiency, ease of use, and durability in outdoor conditions during the design and material selection process.

Technical Skills

Technical: 3D Printing with Prusa i3 MK3S+ & Ultimaker 2/3, Soldering, Laser Cutting
CAD Softwares: Solidworks, AutoCAD, Fusion 360, Inventor
Languages: Python, MATLAB, Java, Maple, Visual Basic, Arduino, LaTeX (used to create this document)

Social Engagements

Club Member : Bass Connections, Men's Club Soccer, IM Soccer
Volunteer: Hilton Elementary School - Teacher Assistant, Tutoring
Sports-Engagements: Soccer, Running, Golf
Interests: Prototyping, 3D Printing, Drones