Ryan Christ

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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*
- Designed and 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 Mini drone, 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