

Alexey D. Khotimsky

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EDUCATION

Georgia Institute of Technology

Atlanta, GA | August 2021 – May 2025 (expected)

B.S. in Mechanical Engineering, German Minor — GPA 4.00

- Daniel E Martinez,[...], **Alexey Khotimsky**, et al., “MRI Compatible Robotic Dosimeter System for Safety Assessment of Medical Implants”, International Symposium on System Integration (2024)

PROFESSIONAL EXPERIENCE

Research Intern, BioRobotics and Human Modeling Lab

Atlanta, GA | Jan 2022 – present

- Designed 6 DOF parallel-plane robot for radiofrequency ablation; decreased robot height by 35% for MRI
- Coded interface in MATLAB implementing Intel RealSense cameras; reduced image processing time by 85%
- Prototyped handheld device to aid cannulation of hypovolemic pediatric patients
- Modeled the effect of external vacuums on vascular distension in ANSYS to establish design requirements
- Presented research findings to Children’s Healthcare of Atlanta (CHOA); secured additional year of support

R&D Mechanical Engineering Intern, Vicarious Surgical

Waltham, MA | Jan 2023 – June 2023

- Developed testbed to evaluate a robotic camera cleaning system; implemented PID control of a DC motor in C++
- Used OpenCV and Python to analyze cleanliness of 100+ experimental images
- Iterated on the design of and manufactured 200+ wipers; achieved camera cleanliness of >95%

PROJECT EXPERIENCE

Robotic Elevator Design (ME 2110: Creative Decisions and Design)

- Designed and manufactured a 3-stage robotic lift capable of lifting 52”; stayed under \$20 budget
- Integrated a circuit current sensor using Arduino; led to >90% consistency and durability
- Team qualified 3rd out of 68 teams in Fall 2023 ME 2110 Final Competition

FSAE Electric Racecar Radiator Design (Hytech Racing)

- Designed aluminum fluid radiator using SolidWorks to suit new aerodynamics package
- Optimized radiator position and size with EES script; reduced total fin area by 47% and mass by 66%
- Team placed 3rd out of 55 in the 2022 FSAE Michigan Electric Competition

Graffiti Gun Design (ME 1670: Engineering Graphics and Design)

- Drew assembly and part drawings for a 20+ part assembly designed
- Visualized team design by creating renderings in SolidWorks Visualize
- Managed tightly-knit team of 4 in implementing GrabCAD version control

LEADERSHIP AND INVOLVEMENT

Learning Assistant for COE 3001: Mechanics of Deformable Bodies

Atlanta, GA | January 2024 – present

- Facilitated learning experiences for students by assisting during in a flipped classroom
- Hosted weekly office hours to provide personalized assistance and clarification on assignments

Robotics Team Mentor (First Robotics League)

Westborough, MA | January 2021 – June 2023

- Founded two teams of six students, taught engineering and programming skills
- Led both teams to advance to the annual New England competition

First-Year Activities Board

Atlanta, GA | August 2021 – June 2022

- Planned campus outreach events with attendance of 400+ students to increase first-year campus engagement
- Managed spending of a \$14,000 budget from Georgia Tech Residence and Housing Association

HONORS & AWARDS

PURA (President’s Undergraduate Research Award) Scholarship (2023)

Barry and Gail Spurlock Foundation Scholarship (2022)

SKILLS

Machinery: 3D-printing, laser cutting, metal milling, wood shop tools, circuits, mechatronics

Modeling: Certified SolidWorks Professional (CSWP), FEA, ANSYS, GD&T

Programming: C++, Arduino, MATLAB, ROS, Python, OpenCV, Java, LaTeX

Languages: English, Russian, German (intermediate)

EXTRACURRICULAR ACTIVITIES

Colorado Trail thru-hike (2023), Appalachian Trail thru-hike (2021)

Intramural tennis, soccer, and racquetball