Joseph Telaak

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Education

University of South Carolina — Columbia, SC
B.S.E in Computer Engineering; ***GPA: 4.0*** — *Aug 2022 – Jun 2025 (Expected)*
B.S in Mathematics

South Carolina Governor's School for Science and Mathematics — Hartsville, SC
High School Diploma; ***GPA: 3.8*** — *Aug 2020 – May 2022*

Research Experience

USC SyReX Lab — Columbia, SC
Undergraduate Research Assistant — *Feb 2023 – Present*

- Currently working with Dr. Sanjib Sur in the Computer Science and Engineering Department
- Developing applications for millimeter-wave radar systems
- Creating a dataset for radar-based pedestrian detection using radar, LiDAR, and camera sensors
- Developed a demo to display radar-detected vital signs compared with a optical heart rate sensor
- Improved the data-transfer rates, which were a known issue by the manufacturer, by 5x

GSSM Autonomous Golf-Cart Project — Hartsville, SC
Project Leader — *Jan 2022 – May 2022, Jan 2023 – Present*

- Proposed and developed a new engineering-projects course with Dr. Elaine Parshall at GSSM
- Handled project funding, and raised over $50,000
- Designed and built a PCB to control existing golf-cart hardware
- Implemented a LiDAR and camera-based object detection system

USC Cyberinfrastructure Lab — Columbia, SC
Undergraduate Research Assistant — *Jun 2021 – Jul 2021*

- Worked with Dr. Jorge Crichigno in the Integrated Information Technology Department
- Developed applications for P4 Programmable Switches
- Developed scripts to automate packet loss and throughput measurements

Work Experience

South Carolina Governor's School for Science and Mathematics — Hartsville, SC
Interim Instructor — *Jan 2023*

- Guest instructor for Dr. Elaine Parshall's course during the January Interim term
- Helped teach electronics engineering and embedded systems to current students
- Focused on applications of microcontrollers and sensors related to the golf-cart

Awards & Achievements

USC Dean's List	*Spring 2022*
USC President's List	*Fall 2022*
USC Fall 2022 Code-A-Thon Runner-Up	*Fall 2022*
FTC Design Award	*Spring 2021-2022*
AP Scholar With Distinction	*Spring 2020*
FRC Design Award	*Spring 2019*

Skills

Programming: C, C++, Java, Python, MATLAB, R, MySQL, VHDL
Technologies: ROS, Intel Quartus, P4, mmWave Studio
Languages: English (Native), German (Elementary), Mandarin Chinese (Elementary)

Relevant Coursework

Graduate-level coursework: CSCE-750 Analysis of Algorithms, CSCE-611 Advanced Digital Design, CSCE-513 Computer Architecture, CSCE-567 Visualization Tools

Other coursework: CSCE-313 Embedded Systems, CSCE-274 Robotics, CSC-340 Artificial Intelligence, CSC-311 Compilers, CSC-270 Database Design

Organizations

IEEE Eta Kappa Nu Honor Society (*IEEE HKN*)

American Institute of Aeronautics and Astronautics (*AIAA*)

Assoication for Computing Machinery (*ACM*)

Institute of Electrical and Electronics Engineers (*IEEE*)

Engineers Without Borders (*EWB*)

Grants

USC REU $3.9k	*Summer 2023*
USC REU $2.7k	*Spring 2023*
USC REU $2.7k	*Spring 2023*
USC Dean's Scholarship $3k	*Fall 2022*
USC Palmetto Fellows $10k	*Fall 2022 - Spring 2025*

Conferences

USC CSE Research Symposium, *Columbia, SC*	*Apr 14, 2023*
AIAA Reigon 2 Student Conference, *Knoxville, TN*	*Mar 26-28, 2023*
GSSM 34th Annual Research Colloquium, *Hartsville, SC*	*Nov 17, 2022*
GSSM 33rd Annual Research Colloquium, *Hartsville, SC*	*Oct 22, 2021*
SPRI 2021 Poster Session, *Columbia, SC*	*July 16, 2021*

Posters

P1 Joseph Telaak, Elie Kfoury, Jose Gomez, Ali AlSabeh, Shahrin Sharif, Jorge Crichigno, Designing an Arduino-based Rocket Flight Computer for Embedded Systems Education, SPRI 2021 Poster Session, July 2021

Publications

C1 Joseph Telaak, Wout De Backer, Designing an Arduino-based Rocket Flight Computer for Embedded Systems Education, AIAA Region 2 Student Conference, Mar 2023