

Elizabeth Klosa

519-504-9785 / klosalizzy@gmail.com / www.linkedin.com/in/elizabethklosa/

Education

Queen's University, Bachelor of Computing (Honours)

2019 – 2024

- Specialization in Biomedical Computing (4.19 GPA)
- Dean's Honour List (2020, 2021, 2022, 2023)

Óbuda University

2023

- ERASMUS+ student
- Completed ROS2 and computer-assisted surgery course

Work & Projects

Queen's University, Laboratory for Percutaneous Surgery - Researcher

2021 – present

- Received NSERC Undergraduate Student Research Award (2021)

Hernia Tutor Project

- Leading a project to develop a computer-assisted training platform for surgical residents learning hernia repairs
- Used AI techniques for real-time segmentation, object detection and workflow recognition
- Designed and developed the end-user interface of the platform
- Supervised and trained other team members on the project

3D Slicer Module

- Segmentation Module: developed a 3D Slicer module to automatically segment images to reduce labelling time
- Annotation Reviewer Module: developed a 3D Slicer module to review and fix bounding box labels easily

Óbuda University, Antal Beczy Center for Intelligent Robotics - Researcher

2023 - present

- Received MITACS Global Research Award to conduct research in another country
- Analyzed ECG and motion data from a spike test performed on the da Vinci Surgical Robot Kit to distinguish between skill levels of participants

Queen's University, Undergraduate Thesis

2022 - 2023

- Computer-assisted workflow recognition for open inguinal hernia repair training

Queen's University, BioMechatronics Design Team – Software and structural sub team

2023 - present

- Designing and constructing load-bearing leg exoskeletons for real-world applications
- Gaining experience with ROS2, signal processing, AI techniques, GitLab for version control

Queen's University, Teaching Assistant (Artificial Intelligence, Data Structures)

2023 - present

Sun Life Financial - On Site Support Technician

2020

- Performed computer upgrades including hardware imaging and device setups

Publications

Society of Photographic Instrumentation Engineers (SPIE) - Medical Imaging

(2023) *Identifying tool-tissue interactions to distinguish steps in simulated open inguinal hernia repair*

(2023) *Using object detection for surgical tool recognition in simulated open inguinal hernia repair surgery*

(2022) *Tissue segmentation for workflow recognition in open inguinal hernia repair*

Imaging Network of Ontario

(2023) *Comparing methods of identifying tissues for workflow recognition of simulated open hernia repair*

(2022) *Identifying tissues for task recognition in training of open inguinal hernia repairs*

Volunteer

Queen's Kaleidoscope

2022 - present

- Visit an at-risk elementary student weekly to provide social and academic support

Skills

Technical skills: Python, MATLAB, C, Java, Bash, ROS2, Linux, GitHub, 3D Slicer, MySQL, Fusion 360, OpenSCAD, machine learning

Soft skills: time management, communication, problem solving, organization, attention to detail, quick learner, leadership