

Christos Sevastopoulos, Ph.D.



csevast@uic.edu



christos-sevastopoulos



Christos Sevastopoulos



ChristosSev



682 808 0940



Chicago, IL



US Permanent Resident (Green Card)

EDUCATION

Ph.D. in Computer Engineering, *University of Texas at Arlington*

- Computer Vision, Robotics, Deep Learning
- Related Coursework: Machine Learning, Human-Computer Interaction, Data Analysis & Modeling, Data Structures & Algorithms Design

Aug 2019 – Dec 2023
Arlington, TX, United States

MS in Robotics, *University of Bristol*

Concentration: Autonomous Vehicles & Control

Jan 2017
Bristol, United Kingdom

BS in Physics, *National and Kapodistrian University of Athens*

Jul 2015
Athens, Greece

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher, *University of Illinois Chicago*

- Applying Diffusion and Transformer-based models for image super-resolution and signal denoising tasks in medical imaging, incorporating PubMedBERT for embedding text-based patient records to improve contextual understanding

Jan 2024 – present
Chicago, IL, United States

Machine Learning Intern, *GN Group*

- Developed a scene understanding framework using SoundNet, CNNs, and YOLO, which helped identify and visualize key sound sources in audiovisual inputs

May 2022 – Aug 2022
Glenview, IL, United States

Machine Learning Intern, *National Centre of Scientific Research "Demokritos"*

- Employed Deep Learning and the Unity game engine to design indoor and outdoor simulation environments for mobile robot navigation

May 2021 – Aug 2021
Athens, Greece

TECHNICAL SKILLS

Programming Languages

Python, SQL, C#, MATLAB

Libraries & Frameworks

PyTorch, Keras, Tensorflow, NumPy, Pandas, Scikit-learn, OpenCV

Other Tools/ Software

Git, Azure, Spark, ROS

INDICATIVE PROJECTS

Ultrasound Super-Resolution using Diffusion models

Leveraged spatial attention and a diffusion U-Net model to enhance the image quality of low-frequency ultrasound images, utilizing AWS SageMaker for distributed training

LLM-based Multimodal Medical Data Understanding

Used the PubMedBERT NLP technique to combine medical imaging data (ultrasound) with text-based patient records to improve context for radiologists

Free-space Segmentation using RGB-D information

Developed a method achieving an 87% IoU for indoor free-space segmentation using depth-adaptive superpixel information from data collected by a mobile robotic platform, 2023 IEEE International Conference on Robotic Computing (IRC)

Mobile Robot RGB-Laser Sensor Fusion

Conducted high-level indoor scene understanding using sensor fusion, achieving approximately 92% peak accuracy, 2023 IEEE 19th International Conference on Automation Science and Engineering.

Indoors Mobile Robot Traversability Estimation using Transfer Learning

Fine-tuned a Vision Transformer using the Hugging Face models, achieving up to 93% accuracy on a small indoor robotic navigation dataset, 2022 Sixth IEEE International Conference on Robotic Computing (IRC)

NOTABLE PUBLICATIONS

Few-shot Traversability Segmentation of Indoor Robotic Navigation with Contrastive Logits Align,

2024

IEEE CASE 2024

Qiyuan An, Christos Sevastopoulos, Farnaz Farahanipad, and Fillia Makedon

Learning Indoors Free-Space Segmentation for a Mobile Robot from Positive Instances,

2023

2023 Seventh IEEE International Conference on Robotic Computing (IRC), 21-24

Christos Sevastopoulos, Joey Hussain, Qiyuan An, Stasinos Konstantopoulos, Vangelis Karkaletsis, Fillia Makedon

Enhancing Robustness of Indoor Robotic Navigation with Free-Space Segmentation Models Against

2023

Adversarial Attacks, 2023 Seventh IEEE International Conference on Robotic Computing (IRC)

Qiyuan An, Christos Sevastopoulos, Fillia Makedon

Learning Indoors Free-space Segmentation for a Mobile Robot from Positive Instances, 2023 Seventh IEEE International Conference on Robotic Computing (IRC), Accepted for Publication Christos Sevastopoulos, Qiyuan An, Joey Hussain Stasinos Konstantopoulos, Vangelis Karkaletsis, Fillia Makedon	2023
Indoors Traversability Estimation with RGB-Laser Fusion, IEEE CASE 2023 Christos Sevastopoulos, Michail Theofanidis, Aref Hebri, Stasinos Konstantopoulos, Vangelis Karkaletsis, Fillia Makedon	2023
Towards Safe Visual Navigation of a Wheelchair using Landmark Detection, MDPI Technologies Christos Sevastopoulos, Mohammad Zaki Zadeh, Michail Theofanidis, Sneha Acharya, Nishi Patel, Fillia Makedon	2023
An RGB-D Fusion System for Indoor Wheelchair Navigation, ACM Pervasive Technologies Related to Assistive Environments (PETRA) 2023 Christos Sevastopoulos, Sneha Acharya, Fillia Makedon	2023
Indoors Traversability Estimation with Less Labels for Mobile Robots, 2022 Sixth IEEE International Conference on Robotic Computing (IRC) Christos Sevastopoulos, Michail Theofanidis, Mohammad Zaki Zadeh, Sneha Acharya, Stasinos Konstantopoulos, Vangelis Karkaletsis, Fillia Makedon	2022
A Survey of Traversability Estimation for Mobile Robots, IEEE Access, Volume 10 Christos Sevastopoulos, Stasinos Konstantopoulos	2022
A Simulated Environment for Robot Vision Experiments, MDPI Technologies Christos Sevastopoulos, Stasinos Konstantopoulos, Keshav Balaji, Mohammad Zaki Zadeh, Fillia Makedon	2022
Improving traversability Estimation Through Autonomous Robot Experimentation, Computer Vision Systems: 12th International Conference, ICVS 2019 Christos Sevastopoulos, Katerina Maria Oikonomou, Stasinos Konstantopoulos	2019

TEACHING EXPERIENCE

Teaching Assistant, University of Texas at Arlington CSE-5324: Software Engineering, Analysis, Design & Testing (Android Development) CSE-2315: Discrete Structures	2019 – 2023
--	-------------

SERVICE

Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)	2023
Reviewer, Journal of Field Robotics	2022 – 2023
Reviewer, ACM Pervasive Technologies Related to Assistive Environments Conference	2020 – 2023
Session Chair/ Coordinator, ACM Pervasive Technologies Related to Assistive Environments Conference	2021 – 2023

AWARDS

Dissertation Fellowship Award, UT Arlington Summer Fellowship Award for a total of \$8,000	2023
Dean's Award, UT Arlington For research/travel purposes total of \$1,000	2023
Best Student Paper Award, PETRA 2023 Conference For the article 'An RGB-D Fusion System for Indoor Wheelchair Navigation'	2023
Highest Impact Paper Award, UT Arlington For presenting my work "Learning Indoor Free-space Segmentation for a Mobile Robot from Positive Instances" among 22 PhD students, 2nd position \$400	2023