

Andreas LYDAKIS

PERSONAL INFORMATION

PLACE OF BIRTH: Athens, Greece
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TECHNICAL SKILLS

Extensive Knowledge: JAVA, C++, PYTHON(PANDAS/NUMPY/SCIPY), R, MATLAB, ROS, Tensorflow, GIT, LINUX
Working Knowledge: C, SCALA, ANDROID, PHP, mysql, HTML, JAVASCRIPT, C#/UNITY3D, SQL/MONGODB, CSS, \LaTeX

EDUCATION

September 2015 - Present Graduate Student, Dept. of Computer Science, **University of New Hampshire**, Durham, U.S.A.
CURRENT GPA:3.54 Expected to Graduate May 2018
Research Interests & Classes: Human-Robot Interaction, Robot Planning, Assistive Robotics, Machine Learning, Algorithms, Artificial Intelligence

March 2013 Diploma in COMPUTER ENGINEERING & INFORMATICS, **The University of Patras**,
Thesis: "Maze Solving Using A Lego NXT Robot"
Advisor: Ass. Prof. Ioannis CHATZILYGEROUDIS
Designed and built a Lego NXT maze solving robot, and reviewed several maze solving algorithms.

WORK EXPERIENCE

September 2015 - Present Research Assistant in the University of New Hampshire

- Teaching Assistant: Introduction to Mobile Robotics, Operating Systems, Database Systems, Computer Networks
- Research & Projects: Human-Robot Interaction, Robot Navigation, Learning from Demonstration, Assistive Robotics, Decision Making Under Uncertainty, Reinforcement Learning, Parallel Programming, Optimization
- Developed novel machine learning based robotics applications for upper and lower limb rehabilitation, personalized for individual users, that can be used without expert supervision.
- Experience with multiple robotic platforms: Pioneer 3-DX, Turtlebot, Nao, Neobotix MP400, Cyton Gamma-300, custom robotic rovers.

June 2013 - August 2015 Software and Knowledge Engineering Lab, Institute of Informatics and Telecommunications (IIT), N.C.S.R. Demokritos
Research Assistant

- Developed R.O.S.(Robot Operating System) applications in C++ & Python for autonomous and remote controlled robot navigation, robot vision, interfacing with Android devices, and communication with Raspberry Pi and Arduino controlled devices. Worked with simulators such as Gazebo & Stage. Maintained the lab's Github repository.
- Project Assistant in IIT's International Research-Centered Summer School 2013. The project included recognizing and learning human walking patterns through laser scans and depth imaging, distinguishing humans from other obstacles, face detection and recognition and speaker diarization.

PUBLICATIONS

- July 2017* | 15TH International Conference on Rehabilitation Robotics.
A Learning-based Agent for Home Neurorehabilitation.
Lydakis A., Yuanliang M., Munroe C.
This paper presents the iterative development of an artificially intelligent system to promote home-based neurorehabilitation. The system uses an MDP to create a personalized exercise model based on the user's EMG and IMU signals. The model is then used to provide real time feedback and corrective prompts when the user is performing rehabilitation exercises without a therapist's supervision.
- June 2017* | International Conference on Pervasive Technologies Related to Assistive Environments.
Irregular Gait Detection using Wearable Sensors.
Lydakis A., Kao P.C., Begum M.
This paper presents a personalized system for detecting irregular gait parameters that may lead to a fall. It uses an Adaptive Neuro-Fuzzy Inference System to differentiate between 4 types of gait irregularities. Awarded the NSF Travel Grant.
- February 2015* | EAI Endorsed Transactions on Pervasive Health and Technology, Special Issue on Mobile and Wireless Technologies for Healthcare.
Interacting with and via mobile devices and mobile robots in an assisted living setting.
Dagioglou M., Lydakis A., Kirstein F., Dogruoz A.S, Konstantopoulos S.
This paper outlines a research plan regarding the use of hand-held devices as the means of communication between users and robots in the context of remote health monitoring. It is based on a real life study conducted during I.R.S.S. 2014.
- March 2014* | Ninth Annual Conference on Human-Robot Interaction (HRI 2014)
EMBODIED VISUAL PROGRAMMING FOR ROBOT CONTROL
Konstantopoulos S., Lydakis A, Gkikakis A.E.
This paper proposes a user-friendly framework for enabling everyday users to use simple command prototypes to create complex tasks for a household robot, without the need for extensive training

RESEARCH INTERESTS

- Mobile Robotics
- Robot Assisted Rehabilitation
- Developing Reliable Robotic Assistants for Sensitive Demographics, Such As Disabled Or Elderly Populations
- Robust Human-Robot Interaction
- Applied Machine Learning

LANGUAGES

ENGLISH: Fluent
GREEK: Native
FRENCH: Basic Knowledge