Dimitris Chamzas

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Education

- **Northwestern University** — Evanston, US
  Attending MS program in robotics — *Sept. 2020*
- **Member of the Technical Chamber of Greece** — Athens, Greece
  certification — *Aug. 20, 2020*
- **University of Patras** — Patra, Greece
  Integrated Master in Electrical and Computer Engineer(MSc Equivalent) — *Oct.2013- Oct.2019*
  - Grade cumulative average **7.1/10** equivalent to **3.1/4.0** GPA using WES[1] GPA calculator
  - Diploma Thesis (in Greek): *Advanced Techniques of Human-Machine Interaction in Virtual or Augmented Reality Environments* (**demo video** [2])
  - Relevant courses: Robotics, Computer Graphics and Virtual Reality, Control Theory, Signals & Systems, Databases & Algorithms, Linear Algebra, Applied Mathematics
- 1^{st} **High School of Xanthi** — Xanthi , Greece
  High School Diploma — *Sep. 2010 - June 2013*
  - Graduated with **17.9/20** cumulative average, and received praise(over 17) each year

Work and Research Experience

- **Greek Army** — Xanthi, Greece
  Army Engineer — *Oct. 2019 - July 2020*
  - Full-filled Mandatory Service for Greek Army
- **RoboticsClub,** https://web.facebook.com/pg/Polymechanon — Patra, Greece
  Robotics Engineer — *Sep. 2016 - June 2019*
  - Won many times 1st prize at universal ROBOTEX contest in the category "Following Line"(2015-2018) and "Following Line Enhanced"(2016-2018)
  - Designed and manufactured PCB boards to control the robots
  - Developed robotic algorithms for micro-controllers with limited resources(teensy)
  - Developed an online simulator to test the behaviour of the robot in different environments
- **Athena Research Center, Clepsydra Center** (clepsydra.ipet.gr) — Xanthi, Greece
  Student Intern, Contract no 708 — *Aug. 1, 2019 - Oct. 31, 2019*
  - Worked on SRACH-3/Subcontract i-3D-Icons
  - Subject of work *3D Digitization and Augmented Reality using Specialized Hardware*
- **Irida Labs Center,** https://www.iridalabs.gr — Patra, Greece
  Student Intern — *June 2017 - Sept.2017*
  - Implementation of a VSLAM algorithm with a monocular camera
  - Familiarization with depth-images processing techniques
- **Athena Research Center,** http://iguide.ceti.gr — Xanthi, Greece
  Student Intern, Contract no 622 — *August 3, 2015 - October 31, 2015*
  - Worked on iGuide a social enriched mobile guide
  - Worked on text to speech narration in Greek, English and Bulgarian Languages

Publications

[1] https://applications.wes.org/igpa-calculator/igpa.asp

[2] www.youtube.com/watch?v=OyU4GOLoXnA

1. Dimitris Chamzas and Konstantinos Moustakas, "3D Augmented Reality Tangible User Interface using Commodity Hardware", *in 15th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications* (GRAPP), Valletta, Malta, 25-27 February 2020, *(Accepted as sort paper with a poster presentation, sort listed for best papers)* [3]

2. Dimitris Chamzas, Constantinos Chamzas and Konstantinos Moustakas, "cMinMax: A Fast Algorithm to Find the Corners in a N-dimensional Convex Polygon",, *accepted for presentation in 16th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (GRAPP), Online, 8-10 February 2021*

[3] https://www.dropbox.com/s/vntdoq7al5hwti2/paper1Submitted.pdf?dl=0

Notable University Projects

- Implemented Python platform for controlling a Lego-robot via Bluetooth
- Implemented a closed-loop transfer function using operation amplifiers
- Implemented an algorithm which creates the point cloud from RGBD images
- Developed a full 3D city simulation environment with multiple computational geometry algorithms such as collision detection, ray tracing, Delaunay triangulation, and gravity
- Developed an agent that can play on online platforms the game called Score Four initialize with min-max search and subsequently with neural networks
- Constructed the model of an IRB-52 industrial robot and derived the Denavit-Hartenberg Parameters, Inverse Kinematics, Jacobian Matrix, Singularities, and a PD controller to follow a given trajectory.
- Leader-following formation and beading control of networked quad-copters
- Simulation of Multi-Agent navigation for real-time execution with reciprocal velocity obstacle and collision-free.
- Implemented a real-time Low Cost Augmented Reality System with a 3D tangible interface, using a smart mobile, a Raspberry Pi 4, a Raspberry Camera and a Structure Sensor (part of my Diploma Thesis)

Software -Hardware Skills

Programming Languages: Assembly, C, C++, C#, Python, Java, Matlab

Operating Systems: Linux, Android, Windows

Micro-Controllers: Arduino, Rasberry Pi

Designing: PCB, 3D Printing

Other: OpenCV, OpenGL, GPU multiprocessing, UNITY, Vuforia

MOOCS

- An Introduction to Interactive Programming in Python (Rice University) course1 course2
- Artificial Intelligence (Berkeley University)course
- Learn Ethical Hacking course

Languages

English: MICHIGAN CERTIFICATE OF PROFICIENCY, Level: C2(Excellent)

Other Skills/Interests

Sailing: Sailing the Aegean Sea since 12 years old. Acquired Sailing diploma in 2012. Have won multiple medals and prizes in competitive sailing in the Ionian Sea

Water-polo: Won multiple medals both with my team and as swim athlete

Skiing: Skiing every winter for the last 10 years

Scout: Active member of the Scout Community for more than 15 years

First aid: Acquired certification at first aids from Hellenic Red Cross in 2016