

Alexandros Petridis

🌐 Personal Website github.com/al1998petridis **in** [in/alexandros-petridis](https://www.linkedin.com/in/alexandros-petridis) ✉ alepetpan@ece.auth.gr

EDUCATION

ELECTRICAL & COMPUTER ENGINEER

ARISTOTLE UNIVERSITY OF THESSALONIKI

Dec 2016 – Present | Thessaloniki, Greece

- Department of Computers & Electronics.
- Type of credits: ECTS – Number of credits completed: 270/300.

THESIS

REAL-TIME INTRUSION DETECTION SYSTEM

Python • Networking • Cybersecurity • IoT

I am currently working on my Thesis for my Electrical & Computer Engineer degree. Which deals with real-time detection of security anomalies on smart infrastructure within an IoT network with machine learning techniques.

WORK EXPERIENCES

ASSISTANT COMPUTER ENGINEER

IT DEPARTMENT OF AUTH

Oct 2018 - June 2019

- Support for services and infrastructure of e-Government Center
- Worked as Level 1, 2 and 3 of technical support
 - Level 1: First line of technical support responsible for basic customer issues
 - Level 2: Administrative support denoting advanced technical troubleshooting and analysis methods
 - Level 3: Responsible for the research and development of solutions to new or unknown issues.
- Development and services support on Information & Communication Technologies for research at AUTH

ASSISTANT COMPUTER ENGINEER

AGRICULTURE AND SURVEYING ENGINEERING DEPARTMENT OF AUTH

Dec 2018 - June 2019

- Upgrading and expansion of library, computer lab and other infrastructures of the Department of Agriculture and Surveying Engineering
- Worked as Level 1 and 2 of technical support
- Development and services support on Information & Communication Technologies for research at ASE

DIGITAL SKILLS

PROGRAMMING

Python • Java • C • Matlab
C++ • SQL • PHP • Octave
Assembly • Verilog • \LaTeX
HTML • CSS • JavaScript

FRAMEWORKS/LIBRARIES

Python: Flask • SQLAlchemy
WTForms • TensorFlow • Keras
Scikit-learn • Numpy • Pandas
Matplotlib • Django • Tkinter
Pickle • Shelve • Jupyter notebook

C: Pthreads • OpenMP
OpenCilk • MPI

Java: TCP/IP • UDP packets

HTML: Bootstrap • Flexbox

CSS: CSS Grid

SOFTWARE TOOLS

Visual Studio Code • Eclipse
MongoDB • PostgreSQL
MySQL • Docker • Git
Linux Bash • Heroku
Jupyter Notebook • Nmap
Wireshark • Julia • Overleaf
Node-RED • OMERE
ModelSim • Keil μ Vision • PSpice

ONLINE COURSES

ADVANCED WEB DEVELOPMENT

COMPLETED WITH GRADE 80%

Feb 2021 - Apr 2021

ADVANCED PROGRAMMING IN PYTHON

COMPLETED WITH GRADE 93%

Nov 2021 - Dec 2021

INTRODUCTION TO WEB DEVELOPMENT WITH FLASK

COMPLETED WITH GRADE 96%

Dec 2021 - Feb 2022 (96%)

PERSONAL PROJECTS

BUS DATABASE

MySQL • HTML • PHP

- Created a php web application which i succesful deploy on heroku. The app is for organizing travel business trips and can be user from company's secretary and a customer.
- **Github repository:** PHP simple app and Bus Database deliverables

MOVIES BLOG

Python (Flask, SQLAlchemy, WTFORMS) • HTML • CSS

- Created a fully functional web application in which users can write about their favourite movies and their features. Movies can be categorised by rates or by year of screening. Also each user can see another user's movies.
- **Github repository:** Flask Movies

COUNTRY QUIZ

HTML • CSS • JavaScript

- Created a fully functional web country quiz game using asynchronous JavaScript.
- **Github repository:** Greek Country Quiz

CARD GAME

Python (Tkinter, pickle)

- Created a fully functional application resembling the well know game of 31, using GUI and animations.
- **Github repository:** Card Game Python

UNIVERSITY PROJECTS

SOFTWARE ENGINEERING

Note-RED • Swagger • UML • Gherkin • REST

- Teamed up with three fellowship students we created two deliverables for University course Software Engineering. One with our application's user requirements and system specifications and one with software specifications and system's implementation. The purpose of the application was to facilitate people to meet the needs for walks and/or keeping their pets.
- **Github repository with deliverables:** Software Engineering

COMPUTER NETWORKS

Java

- Create a network programming app on User Datagram Protocol and Audio packet transmission.
- Create a network programming app on asynchronous serial communications.
- **Github repos:** UDP, Asynchronous

COMPUTATIONAL INTELLIGENCE

Matlab (Simulink) • Python (Tensorflow, Keras, Jupyter Notebook)

- Build a Fuzzy PI Controller on Simulink
- Solve a regression problem using TSK Models with Fuzzy Neural Network on Matlab
- Solve a classification problem using MLP Network with Tensorflow and keras on Jupyter Notebook
- Solve a regression problem using RBF Network with Tensorflow and keras on Jupyter Notebook
- **Github repo:** Computational Intelligence

RELIABILITY

OMERE

- Bibliographic Work on Formal Verification of Software
- Astronomical mission of Tandem-X on OMERE
- **Github repo:** Reliability

CONFERENCES AND

SEMINARS

CYBERSECURITY: CAPTURE THE FLAG

Apr 2021, EESTech Challenge 2021

ECESCON 12

Apr 2021, AUTH

INTRODUCTION TO MACHINE LEARNING WITH PYTHON

Apr 2021, EESTEC LC Thessaloniki

LANGUAGE SKILLS

- Mother tongue: Greek
- Other language: English (Michigan B2 Certification)
 - Listening: C1
 - Reading : C1
 - Writing: B2
 - Spoken production: B2
 - Spoken interaction: B2

PARALLEL & DISTRIBUTED SYSTEMS

C (Pthreads, OpenMP, OpenCilk, MPI)

- Solve $C = A \odot (A * A)$ with parallel implementations on OpenMP, OpenCilk and Pthreads
- A subroutine was implemented that redistributes points into processes so that the first $\frac{p}{2}$ processes retrieve points that are less than or equal to the median Euclidean distance and the remaining $\frac{p}{2}$ processes retrieve points that are greater than or equal to the median distance.
- **Github repos:** Parallel Implementations and MPI

EMBEDDED SYSTEM

C (Pthreads) • Raspberry Pi

- Bluetooth detector that simulates a Covid-19 Trace Scenario.
- **Github repo:** Embedded on Pi

ELECTRONICS

PSpice

- Creation and optimization of an operational amplifier.

OBJECTIVE ORIENTED PROGRAMMING

Java

- Create a Pacman game using Java
- **Github repo:** Pacman

DIGITAL IMAGE PROCESS

Matlab

- Bayer, downsampling, quantization and PPM representation
- Image Segmentation with spectral clustering and normalized cuts
- Scale invariant feature transform with space scales and Difference-of-Gaussians for localization salient keypoints
- **Github repo:** Digital Image Process

DIGITAL HARDWARE SYSTEMS

Verilog

- Create a Finite State Machine
- Create a BCD counter
- Create a Hamming Coder and Encoder
- **Github repo:** Digital Hardware systems

COMPUTER GRAPHICS

Matlab

- Filling triangles to create a raccoon with flat and gouraud feeling
- Transformations and projections of a racoon object
- Different Views of a racoon object
- **Github repo:** Computer Graphics

GRAPH THEORY

Python (Wikipedia, Networkx, BeautifulSoup) • Gephi

- Create a thematic network in Python The theme graph was created based on the See Also section of related topics on the Wikipedia Page and analyze it with Gephi
- **Github repo:** Graph Theory