Alexander **Lelidis**

Software Engineer · Researcher · General computer scientist

Bülachstr. 7 c, 8057 Zurich, Switzerland

31.05.1994

(+41) 768286993 | alex.lexus.info@gmail.com | www.alexus37.github.io | alexus37 | alexander-lelidis-445842b6

"There are two major products that come out of Berkeley: LSD and UNIX. We don't believe this to be a coincidence"
Jeremy S. Anderson

Skills

Programming	**Python**, **javascript** (ES6), TS, C/**C++**, Ruby, JAVA, PHP, Assembler (mios, x86), GLSL, Bash
Databases	SQL, MongoDB, couchDB, pouchDB, postgres
Libaries	**PyTorch**, **Tensorflow**, **React** (Native), Django, tornado, flask, angular, **Redux**, **HTML5**, **CSS3**, Node.JS, **leaflet**, **mapbox**, ros, bootstrap, jquery, Three.js, loadash, boost, cgal, igl
General	SVG, openGL, webGL OSM, OSG, mapbox, OSRM, CAD, ESRI AGO, Metabase
Languages	English (Full professional proficiency) , German (native language), Spanish (4 years of high school classes), Bulgarian (basic knowledge)

Work experience

ESRI — *Zurich, Switzerland*

Software Engineer — *Spring. 2019 - Fall 2020*

- Development of urban planning software in the 3D space in the browser using React and the ESRI Js API
- Research, design and implementation of streetview integration in ARCGis Urban resulting in two opensource packages on NPM
- Planning and execution of telemetry gathering using AWS-Redshift and Metabase increasing user feedback

Antavi GmbH — *Zurich, Switzerland*

Software Engineer — *Spring. 2016 - Winter 2018*

- Design and development of command, control and communication systems in React with live updates via pouchdb
- Scalable Backend and API design in Express running on AWS
- Processing and visualization of raw GIS data analysis using Mapbox and OSRM

Undergraduate Research, Dept. of Information Technology and Electrical Engineering — *Zurich, Switzerland*

Research Assistant at IFE — *Fall 2014 - Spring 2016*

- Getting insights of big mobile crowd GPS data through the implementation of trajectory analysis in Python
- Visualization of complex relations by creating web-based software for crowd analysis in Js
- Research and development of new analysis methods using GPS data to provide crowd flow direction estimates

WeltWeitBau GmbH — *Berlin, Germany*

Software Engineer — *Fall 2012 - Spring 2016*

- Development of software civil engineering tools in Java and C++
- Reducing software quality assurance time by implementing continues integration tests with Selenium
- Teaching training courses for the utilisation of the company's products to new clients

Education

ETH Zurich — *Zurich*

Master of computer science (1.3) — *Sep. 2017 - Sep. 2020*

- Joint Thesis with the University of Cambridge
- Focus: Machine Learning and Security

Technical University Berlin — *Berlin*

Bachelor of Computer Science (1.9) — *Oct. 2012 - Apr. 2016*

- Exchange program at ETH Zurich
- Focus: Computer Graphics and Computer Vision

Werner-von-Siemens Gymnasium — *Berlin*

High school diploma (German Abitur 2.1) — *Mai. 2006 - Mar. 2012*

Research

Invisible to Machine Perception: Attacking Pose Estimators with Attribution Methods — *Zurich, Switzerland*

Master thesis — *Mai. 2020*

Geometry Representations for Big Geometry Data with Unsupervised Feature Learning — *Hong Kong, China*

Big Data and Smart Computing (BigComp), 2016 International Conference — *Jan. 2016*

Structure-aware Surface Reconstruction with Sparse Moving Least Squares — *Zurich, Switzerland*

Bachelor thesis — *Aug. 2015*

Projects

Asteroid field simulation — *C++, CGAL, OSG*

University — *https://alexus37.github.io/asteroidField/*

- Realtime N-Body simulation in 3D space with collisions detection and physically correct response computation
- Numerical estimation of gravitational forces using the C++ library CGAL
- Visually pleasing rendering by leveraging OpenSceneGraph

tripTrackr — *Ruby on rails, js, OSG*

Private — *https://www.triptrackr.de/*

- Full-stack development of a travel app for Android and IOS, where users can create a personal webpage with their travel trajectory
- Backend development with Ruby on rails and deployment on AWS infrastructure

WebGL interface for the NORI raytracer — *Python, Django, three.js*

Private — *http://alexus37.github.io/NoriV2Webinterface/*

- Web-based modelling tool and editor for scenes used as input for the physical-based raytracer Nori
- Including a full ecosystem with user management, rest API and server-side rendering running with Django
- Real-time rendering preview using WebSockets with an angular frontend leveraging three.js

Thermal augmented reality chess — *C++, Python, ROS*

University — *http://alexus37.github.io/pdf/report.pdf*

- Connecting a RGB image stream with a thermal image stream to transform every surface to a touch screen
- Using the RGB camera to track augmented reality marker and use OpenGL to render a chess game