

Experience

- 03.2017– **Software Research Intern**, Technicolor R&D, Rennes.
09.2017 A six month long internship, "3D facial acquisition and animation for VR content", doubling as my master thesis, in Technicolor research center in Rennes, France as a part of Face Rigging project. I've streamlined and automated the process of creating a fully rigged 3D facial mesh with multi-view stereo capture rig consisting of consumer grade cameras and animation transfer. A publication is expected early 2018.
Python, Qt, SQLite, Agisoft Photoscan, Autodesk Maya, Git, and various in-house software
- 07.2016– **Software R&D Intern**, Moving Picture Company, London.
09.2016 A two month long internship in one of the best known visual effects studios in the world as a part of FX/Crowd Software R&D team. I've developed a prototype toolset for previewing and post-processing particle caches, tightly integrating with existing in-house software. The developed toolset was well received and post-processing functionality for particles was tried out in production of multiple released movies.
Fabric Engine (KL), Autodesk Maya (MEL), Git, C++, and various in-house software
- 10.2014– **Front-end Engineer**, Tawk.to, Riga.
03.2015 Tawk.to provides embeddable HTML/JS code for "chat with support" for client's website visitors and website analytics. My part was continuous support for all browsers (IE8+) and constant rolling out of new features for visitor side chat widget, the part of the service that is seen everyday by few hundred thousands of people. I've also worked on few internals tools, such as a company-specific Hubot and frontend testing.
Javascript, Node.js, Git, Websockets
- 10.2012 – **Programmer**, Exigen Services Latvia, Riga.
09.2014 I've started as an intern and in two years got through Junior Programmer position to Programmer position. On my internship, I've learned fundamental Java and related technologies, and successfully completed *Brainbench Java 6* test. After internship, I've worked on two big projects: I've implemented production server monitoring using Zabbix (including custom monitoring dashboard for office internal systems and Jenkins builds), and worked on backend insurance policy administration system for AAA NCNU (USA) used by insurance brokers.
Java, SVN, Git, Maven, Hibernate, Tomcat, Oracle SQL, JUnit, Jenkins, Javascript, Angular.js, Zabbix

Education

- 2015–2017 **MSc. Game and Media Technology**, Utrecht University, Utrecht, Netherlands.
Optimization and vectorization, Game production, Computer vision, Computer animation, Advanced graphics, Multimodal interaction, Games and agents, Sound and music technology.
Thesis: *Automated Generation of Animated 3D Facial Meshes: A Photogrammetry and Deformation Transfer-Based Model*
- 2011–2015 **BSc. Computer Science**, University of Latvia, Riga, Latvia.
Calculus, Analytical geometry, Data structures, Algorithms, Operating systems, Information retrieval, Image processing, Software engineering, IT project management and other fundamental CS topics.
Thesis: *Modular Smart Home System With a Prototype Implementation*
- 2011 **High School Diploma in Science and Mathematics**, Riga 10th Secondary School, Latvia.

Programming and software skills

- Proficient Python, Javascript, HTML/CSS
Intermediate C/C++, Java, PHP, SQLs, Linux, Git, Node.js
Familiar OpenCV, SIMD, Maya, Photoshop, Latex, Unreal Engine 4, NumPy, Machine learning

Languages

Russian	Native speaker
English	Fluent
Latvian	Full professional proficiency
German	Elementary proficiency
French	Elementary proficiency

Online courses

Terrorism and Counter-terrorism: Comparing Theory and Practice, *Leiden University /Coursera*.

Machine Learning, *Stanford University/Coursera*.

Technical Interview, *Udacity*.

Android Basics, *Google/Udacity*.

Google Developer Challenge Scholarship: Android Dev, *Google/Udacity*.

Notable hobby and school projects

2017 **Messenger history visualization**, *Hobby*, Javascript, HTML/CSS, SVG, D3.js, Facebook API.

Using Facebook API and D3.js (javascript visualization library) I've created an interactive infograph of my FB Messenger usage patterns in 2016. Circle consists of 365 lines representing days, starting with 00:00 on the inside and ending with 23:59 on the outside. Every received and sent message was plotted as a tiny transparent dash at the appropriate time, resulting in a detailed heatmap.

Full-res screenshot: <https://gubins.lv/stuff/messenger.png>



2016 **Influence of audio features on a song popularity**, *School*, Python, SQLite, Spotify API. Combining Spotify API, SALAMI (chords/song structure annotations) and McGill Billboard dataset (dataset of 1000 songs and their ranks featured on Billboard music charts over the previous decades) I've obtained and analyzed audio features and chord progressions.

2016 **Interactive real-time OpenCL ray tracer**, *School*, C/C++, OpenCL.

As a part of Advanced Graphics master course I've created interactive real-time OpenCL ray tracer for triangle meshes. Final version supported reflections, refractions, shadows, naive supersampling and allowed most parameters to be changed real time. To be able to intersect objects efficiently, the ray tracer used BVH built with Approximate Agglomerative Clustering (Gu et al. 2013).



2016 **Voxel-based 3D reconstruction**, *School*, C/C++, OpenCV.

As part of Computer vision master course, one of the assignments was to obtain a voxel-based 3D model from multi-view video by calibrating intrinsic and extrinsic parameters, and separating background and foreground from each individual frame.

Hobbies

Hackathons	Garage 48 Minsk 2015, Garage 48 Tallinn 2015, Junction Helsinki 2016
Music	Guitar, drums, Propellerhead Reason and Steinberg Cubase
Traveling	17 countries and counting
Sports	Weightlifting/powerlifting, top rope climbing