



# Oleksii Shevtsov, PhD

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## PROFESSIONAL SUMMARY

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Passionate self-driven problem solver and researcher with a background in theoretical physics. More than 4 years hands-on industry experience and more than 9 years in academic research setting. Broad experience in solving and managing complex tasks as demonstrated by many successfully completed research and industry projects. Strong analytical and communication skills, proficiency in several programming languages: C++ (10 years), Python (12 years), JavaScript (5 years), Elixir (2.5 years), and Rust (1 year). Have been involved in solving some of the most demanding problems in automotive, aviation, and green energy industries.

## WORK EXPERIENCE

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### Senior Software Engineer

Apr. 2022 – Now

*Helicon Technologies AB, Stockholm, Sweden*

- Have worked on the embedded software for the second generation of smart energy systems at [Ferroamp](#). The system consists of inverters, solar panels, and batteries connected in the so-called DC nanogrid that allows optimal use of the grid power and substantial electricity cost reduction.
- Took part in developing a web platform for the startup called [Teamkind](#). The platform allows client companies to engage better with their employees by means of regular surveys to make quick decisions and drive changes. Technologies used: ReactJS, Django Web Framework.

### Software Application Developer (Level 4)

Oct. 2021 – Apr. 2022

*Jeppesen Systems AB (A Boeing Company), Göteborg, Sweden*

- Took part in the project on implementing a system for real-time tracking and adjustment of the monthly schedule for the crew members of one of the biggest cargo carriers in the world.
- Worked closely with the customer to refine, analyze, and architect technical solutions based on the business requirements.
- Worked as a team lead responsible for delivering the software module for automated calculation of adjustments to the crew member monthly pay, based on the schedule changes.
- Communicated with other teams and stakeholders to make sure that dependencies and integration points with external systems are satisfied.

### Software Application Developer (Level 3)

Jan. 2020 – Oct. 2021

*Jeppesen Systems AB (A Boeing Company), Göteborg, Sweden*

- Played a leading role in the team of developers implementing contractual agreement rules concerning monthly payments of the crew members, based on the schedule changes which occurred during the operations.
- Got promoted to the senior developer level (level 4) based on the responsibility taken and the performance demonstrated during the course of the project. Have become responsible for leading the team working on the payments module.

- Won a global 3-day hackathon competition (in a team of 3) among company offices worldwide for implementing, as a proof-of-concept, a containerized version of the development environment accessible as a cloud SaaS solution. My role was to implement a web-based UI (with ReactJS framework), which used websocket connection and an HTML VNC client to create a user session and connect to the development environment in the web browser.

### **Embedded Software Engineer (consultant)**

Aug. 2018 – Jan. 2020

*Smart Eye AB, Göteborg, Sweden*

- Was a part of an agile team of developers and researchers working on the software solutions for active driver assistance systems (ADAS) developed for some of the biggest car OEMs worldwide.
- Developed an algorithm for detection of a driver's eye pupil center for the case when the pupil is seen as bright (much harder than the dark pupil case). It allowed to substantially decrease the average spread and error in gaze tracking accuracy.
- Added support for megapixel cameras (as opposed to lower-resolution ones used in earlier projects) to the main library and its supporting Python tools.
- Completed a project on redesign and implementation of an interactive UI-based application using Python and its bindings with the Qt5 framework. It is used to support dynamic camera functionality in the main library, needed when the IR camera is located on the steering wheel column and can change its position.
- Made multiple contributions to the automated software testing infrastructure.

### **Embedded Software Engineer**

Aug. 2018 – Jan. 2020

*AFRY AB (previously ÅF AB), Göteborg, Sweden*

- Took part in the in-house project related to virtual reality (VR) architectural visualization. Working closely with the group of graphics designers and architects, contributed to the project by programming user interaction support within a futuristic city scenery, using C# and Unity engine. The visualization was developed for Oculus Rift VR kit.
- In September 2018 started an assignment as embedded software engineer consultant at [Smart Eye AB](#).

### **Postdoctoral Researcher**

Oct. 2015 – Jun. 2018

*Northwestern University, Evanston IL, United States*

- Led 2 research projects on transport properties of electrons under the surface of superfluid  $^3\text{He}$ , resulting in 2 publications in the international peer-review journals.
- Developed C++ code for parallel computations on a university computer cluster.
- Participated in two international conferences and gave two invited and one contributed talk.
- Maintained active collaboration with the group of Prof. M. Fogelström from Chalmers University.

### **Postdoctoral Researcher**

Jan. 2013 – Oct. 2015

*Chalmers Tekniska Högskola, Göteborg, Sweden*

- Led a research project on superconducting devices sponsored by the Swedish Research Council. As a result, two scientific papers were published and the results presented at multiple international conferences.
- Co-supervised two PhD candidates resulting in 5 collaborative scientific publications and 4 completed projects. Both candidates successfully graduated.
- Developed a short course of lectures for PhD students and postdocs in the lab.

### **Doctoral Researcher**

Nov. 2009 – Oct. 2012

*Commissariat à l'Énergie Atomique et aux Énergies Alternatives (CEA), Grenoble, France*

- Responsible for 3 projects on non-equilibrium transport properties of multiterminal nanodevices and graphene sponsored by the French CFR grant, under supervision of Dr. Xavier Waintal.
- Developed numerical code written in Python for parallel computations on the local computer cluster resulting in 5 scientific publications and a PhD thesis. Maintained a successful collaboration with other group members and a research group in Lyon.

## EDUCATION

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### PhD in Nanophysics

Nov. 2009 – Nov. 2012

*Université Grenoble Alpes, Grenoble France*

Thesis title: “[Contribution to the theory of quantum transport: graphene-based topological insulator and finite-frequency phenomena](#)”

Thesis advisor: Dr. Xavier Waintal (CEA Grenoble)

### Master in Theoretical Physics

Sep. 2008 – Sep. 2009

*Taras Shevchenko National University of Kyiv, Kyiv Ukraine*

Summa Cum Laude. Research advisor: Dr. Yuriy Klymenko (National Academy of Sciences of Ukraine)

### Bachelor in Theoretical Physics

Sep. 2004 – Sep. 2008

*Taras Shevchenko National University of Kyiv, Kyiv Ukraine*

Summa Cum Laude. Research advisor: Dr. Yuriy Klymenko (National Academy of Sciences of Ukraine)

### E-Learning Courses:

- Designing Elixir Systems with OTP, Educative Inc., [License RgxzXQFRARyQL9Y26H0DYj2qQn9OT6](#)
- Advanced CSS and SASS, Udemy, [License UC-0abb8933-be1a-4af6-8926-821b5ff14047](#)
- Lean Product Management, Educative Inc., [License 487B21tRLDvDV2x3yfNIPK2Vj9OWcG](#)
- Docker and Kubernetes, Udemy, [License UC-5e2ea26d-ad7c-4c3b-a6ac-3d9feb74b44](#)
- SQL and PostgreSQL, Udemy, [License UC-47a8b993-7f00-4798-9755-43bc2cf6de62](#)
- Accelerated Computer Science Fundamentals Specialization (3 courses), Coursera Online Platform, [License 4YUQWFN7UYLJ](#)
- Design Patterns in Modern C++, Udemy, [License UC-7Q3ALBMI](#)
- Functional Programming using C++, Udemy, [License UC-80E6WWXW](#)
- Beginning Test Driven Development in C++, Udemy, [License UC-C9G5N9BL](#)
- Machine Learning, Coursera Online Platform, [License VZGG2D4SULCS](#)
- The Complete JavaScript Course, Udemy, [License UC-4Y3XWZB2](#)
- The Advanced Web Developer Bootcamp, Udemy, [License UC-5V37AUL9](#)
- The Complete React Web Developer Course, Udemy, [License UC-MY5S5J1A](#)
- Build Responsive Real World Websites with HTML5 and CSS3, Udemy, [License UC-PCEM4OIB](#)

## ADDITIONAL INFORMATION

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- Languages: English, Swedish, French, Ukrainian, Russian
- Programming skills:
  - Python: 12 years of experience
  - C/C++: 10 years of experience
  - JavaScript, HTML5, CSS3: 5 years of experience
  - Elixir: 2.5 years of experience
  - Rust: 1 year of experience
- Technical skills:
  - Agile software development

- Business requirements analysis
- Systems design and development
- Embedded systems development
- UI and web development
- Object-oriented and functional programming
- Algorithms and data structures
- Parallel computing (MPI, OpenMP, CUDA)
- TeX/LaTeX typesetting

## **HONORS AND AWARDS**

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- **2016** – Postdoc professional development travel award, Northwestern University (USA). Won a travel grant to give an invited talk at the International Conference on Quantum Fluids and Solids 2016 (QFS) held in Prague (Czech Republic).
- **2009** – CFR research grant, CEA Grenoble (France). As a non-EU citizen, received a research grant which covered the 3-year Ph.D. training at CEA and Université Grenoble Alpes.