

# MIKHAIL SOLOVYANOV, MASTERS

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## SUMMARY

- Interdisciplinary scientist in electronics and electrical engineer with skills and experience in electronics, computer networks, programming, machine learning and measurement.
- Led development of a project resulting in a patent.
- Self-motivated, problem-solving and collaborative scientist with notable communication skills.
- Have no stress digging in interdisciplinary fields and learning new subjects on the fly.
- Participated in collaborative projects, resulting in publications, including high impact publications.

## TECHNICAL SKILLS

- **Electronics IC design:** Memory design and simulation, Digital Electronics simulation, analog and digital IC design, Mixed signal simulation, AC, DC, PZ, tran simulation, parasitic parameters analysis. Control and signals theory.
- **Electronics PCB level design:** DC-DC converters, microcontrollers, analog electronics, impedance matched design, and more...
- **Programming of microcontrollers:** STM32 and Arduino programming.
- **System administration:** DEVops and Advanced Linux administration including ARM systems, Windows servers, deployment of VPN, DNS and other server client oriented soft.
- **Networks and Computers engineering:** Server and PC building for complicated tasks, building custom racks and networks.
- **Microscopy/Imaging:** SEM (Scanning Electron Microscope), Optical Microscope, Ellipsometry, semi-professional Photography.
- **Computational and Machine Learning:** Experience in cross platform linux system administration. Have experience in applying machine learning algorithms. General knowledge in framework programming. General knowledge of machine learning methods,

## SOFTWARE AND HARDWARE SKILLS

- **Electronics IC design:** Cadence virtuoso, SPICE, SPECTRE,
- **Electronics PCB design:** Altium designer, STM32 cube IDE, Arduino IDE, KiCad.
- **Programming:** Python, bash, C++ , verylog, verylogA, MATLAB.

## RESEARCH EXPERIENCE

### Neurocomputing systems lab

Engineer

MIPT

September 2017 to present

- This project coordinated by D.Negrov led to development of IC's with a  $Hf_{0.5}Zr_{0.5}O$  based FRAM with 5nm thin ferroelectric layer.
- This project led to 2 conference theses.
- Last year of work led to completion of some analog components for memory testing chip.
- Responsible for development of a memory compiler for new FRAM.
- Used computational methods to evaluate parasitics in prototype IC chips and measuring zonds.

### Twin3d

Leading electrical engineer and Network engineer

Yan 2021 to present

- Build electrical system to trigger and access 150 DSLR cameras in time window of 1ms. This biggest rig in Russia was made for making top edge 3D photorealistic models of people and animals for games cinema etc.
- Single handedly Build full office network for securely storing and accessing 100TB of data
- Build server for four RTX 3090 graphics cards (total cost )

### UVL Robotics

Electronic engineer / System administrator

Feb 2020 to Dec 2020

- Responsible for development and programming of a PCB for AI based drone.
- Created scripts for automated soft building on ARM64 Jetson Xavier NX computer.

### Tech Agent Startup

Senior Electronics Engineer

September 2019 to July 2020

- Developed method to generate electrical impulses read by contact pulsometer as human pulse.
- Developed commercial electronic device to work with almost any training apparatus.
- These projects led to the submission of 2 patents.

### Ailiton medical research

Senior Electronics Engineer

Unimed Group

July 2018 to December 2018

- Led project focused on the developing a device to read a gel card using machine learning algorithms. Eventually led to the creation of a commercial electronic device.

## EDUCATION

- Masters, applied physics and math, Moscow Institute of Physics and Technology (MIPT), 2021
- BS, Bachelor of applied physics and math, Moscow Institute of Physics and Technology (MIPT), 2019.

## TEACHING AND MENTORING EXPERIENCE

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- 2015-2019 - Mentored 6 undergraduates in their day-to-day physics and math SAT-level exam prep.
- 2017-2018 - Tutoring in summer camps (foxford.ru)

## AWARDS

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- Winner of 62 MIPT conference, in section of nanotechnologies.

## CONFERENCE PRESENTATIONS

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- International forum microelectronics 2019. Thesis: "Developing high energy efficient FRAM memory in neurocomputing application".
- 62 MIPT conference. Thesis "Compiler for high energy efficient FRAM memory in neurocomputing application"

## PUBLICATIONS

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Still yet to come

## OTHER SKILLS

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**Software** Linux user, Photoshop.

**Languages** English: professional proficiency. Russian: native.

**Photography** Have experience in professional photography.

**Hobbies** Competition level social dancer (WCS, Hustle), Really love bulding and maintaning computers.