David Saykin

PhD candidate | Research Assistant @ Stanford University

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ABOUT ME

I'm finishing my PhD in Physics at Stanford and actively seeking for a job.
My passion is developing cutting-edge techniques to improve accuracy and efficiency across technological and scientific fields. Through years of international collaborations, I have enhanced my problem-solving and troubleshooting abilities and developed strong collaboration and communication skills. My multi-disciplinary background in Physics, EE, ME, and hands-on experience with hardware design, data acquisition, and signal processing make a great fit for wide range of positions.

RELEVANT PROJECTS

MAGNETO-OPTICAL STUDIES OF QUANTUM MATERIALS
STANFORD UNIVERSITY   **2019 - Present**

• Constructed an interferometer to detect polarization rotation with extremely high sensitivity of 50 nanoradians and used it to measure quantum properties of semimetals and superconductors at cryogenic temperatures
• Pioneered stress-enabled magneto-optical response detection
• Invented new method to detect in-plane magnetization through optical rotation with resolution 100 times higher compared to other setups
• Designed and built a new interferometer which detects miniscule difference in circular polarization amplitudes of reflected light. My apparatus is more robust against reciprocal optical activities compared with other measurement techniques.
• I've been accepted as a speaker to APS conferences in 2022 and 2023.

RF MEASUREMENTS IN QUANTUM COMPUTING PROCESSORS
BLEXIMO CORP.   **Summer 2022**

• Designed, constructed, stress-tested, and automated qubit readout setup which acquires and calibrates vector network analyzer data.

ANOMALOUS ELASTICITY OF GRAPHENE
KARLSRUHE INSTITUTE OF TECHNOLOGY   **2018 - 2019**

• Developed a numerical Monte Carlo simulation scheme (utilizing CUDA) to calculate values for critical exponents and elastic coefficients of 2D membranes.

RELEVANT RECENT CLASSES

CS230: DEEP LEARNING   PROJECT: COMPUTER--VISION ENABLED "DIGITAL" ATOMIC-FORCE MICROSCOPE.   **Stanford, 2022**

CS229: MACHINE LEARNING   **Stanford, 2020**

CS168: MODERN ALGORITHM TOOLBOX   **Stanford, 2023**

AP208 & AP207: LAB ELECTRONICS (DIGITAL & ANALOG)   **Stanford, 2020**

LEADERSHIP

PRESIDENT   STANFORD RUSSIAN-SPEAKING STUDENT ASSOCIATION   **2021 – 2022**

SKILLS

HARDWARE/TOOLS

Laboratory electronics • Fiber/free-space optics • Data acquisition and analysis • Digital signal processing • Hardware design • Automation • Lithography • Machining

PROGRAMMING LANGUAGES

Python (PyTorch, TensorFlow) • C • C++ • Assembler • $\text{\LaTeX}\,2_\varepsilon$ • HTML

SOFTWARE

MATLAB • SPICE • Git • SolidWorks • Mathematica • KiCad • JIRA • Raspberry Pi OS • Arduino IDE • Parallel computing (CUDA, OMP, MPI)

INTERPERSONAL SKILLS

Excellent communication • Teamwork • Leadership • Self-driven Patience • Effective presentation • Outstanding critical analysis

LANGUAGES

English (fluent) • Russian (native)

EDUCATION

STANFORD UNIVERSITY
PHD IN PHYSICS   **2019 - Present**

MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY
MSC IN THEORETICAL PHYSICS
2017 - 2019 | **GPA: 3.7**
BSC IN APPLIED MATH AND PHYSICS
2013 - 2017 | **GPA: 3.9**