

David Saykin

ELECTRICAL ENGINEER @ APPLE · PHD IN PHYSICS FROM STANFORD

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Electrical Engineer at Apple, working on capacitive touch sensing hardware. PhD in Physics from Stanford.

Summary

My background bridges experimental physics and hardware engineering: high-precision lab work, large-scale data analysis, and numerical simulation, now applied to the development and validation of consumer-electronics modules. Through international collaborations, I have strengthened my problem-solving, teamwork, and communication skills. I bring a multidisciplinary toolkit — signal analysis, computational methods, and rapid prototyping — to cross-functional work spanning hardware, firmware, algorithms, and manufacturing.

Education

PhD in Physics

Stanford University

THESIS: STUDIES OF QUANTUM PHASES USING MAGNETO-OPTICAL KERR EFFECT

2019 - 2025

- Working in the group of Aharon Kapitulnik on "Precision Measurements, Quantum Sensors, and Emergent phenomena in Quantum Materials"

MSc in Theoretical Physics

Skolkovo Institute of Science and Technology

THESIS: ABSOLUTE POISSON RATIO OF TWO-DIMENSIONAL CRYSTALLINE MEMBRANES

2017 - 2019

- Working with Igor Burmistrov on "Elasticity of graphene and other two-dimensional membranes"

GPA: 4.6 out of 5

BSc in Physics and Applied Math

Moscow Institute of Physics and Technology

THESIS: MAGNETOCONDUCTANCE OF A BALLISTIC P-N JUNCTION IN A WEYL SEMIMETAL

2013 - 2017

- Working with Konstantin Tikhonov on "Quantum Transport in Topological semimetals"

GPA: 4.9 out of 5

Experience

Touch sensing hardware development and validation

Apple Inc.

ELECTRICAL ENGINEER

09/15/2025 - Present

- Drove bring-up and validation of a new capacitive touch-sensor module through the engineering-validation build.
- Stood up an offline validation station at the supplier site and authored its standard operating procedure.
- Performed precision lab work: ultra-fine soldering and oscilloscope-based signal capture.
- Built end-to-end tester software in MATLAB and Python, including an encrypted supplier-site tool and a factory display-driver tester interface.
- Extended a hardware-control tool with command-line drivers for input devices, production equipment, and measurement instruments.
- Processed calibration datasets and built visualization scripts for the daily build report and supplier-site Gauge R&R data.

Magneto-optical studies of quantum materials

Stanford University

RESEARCH ASSISTANT

2019 - 2025

- Constructed an interferometer to detect polarization rotation with extremely high sensitivity of 50 nanoradians
- Pioneered stress-enabled magneto-optical response detection
- Developed a novel method to detect in-plane magnetization via polarization rotation
- Discovered spin-glass phase in nickelate superconductors
- Experimentally disproved speculated magnetic order in the novel kagome superconductor CsV_3Sb_5
- Studied unconventional superconducting pairing in UTe_2

RF measurements in quantum computing processors

Bleximo Corp.

QUANTUM ENGINEERING INTERN

Summer 2022

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

Anomalous elasticity of Graphene

Karlsruhe Institute of Technology

VISITING RESEARCH ASSISTANT

2018

- Developed a numerical Monte Carlo simulation scheme (utilizing C and CUDA) to calculate values for critical exponents and elastic coefficients of 2D membranes (such as free-standing graphene).

Extracurricular Activity

Journal of Experimental and Theoretical Physics

Moscow, Russia

PEER REVIEWER

2017- 2019

Publications

High Resolution Polar Kerr Effect Studies of CsV_3Sb_5

D. SAYKIN, CAMRON FARHANG, *et al**Phys. Rev. Lett* **131**, 016901

July 2023

Interplay between magnetism and superconductivity in UTe_2

DI S. WEI, D. SAYKIN, *et al**Phys. Rev. B* **105**, 024521

January 2022

Phase diagram of a flexible two-dimensional material

D. SAYKIN, V. KACHOROVSKII, I. BURMISTROV, *et al**Phys. Rev. Research* **2**, 043099

October 2020

Absolute Poisson's ratio ... of a crystalline two-dimensional membrane

D. SAYKIN, I. GORNYI, *et al**Annals of Phys* **168108**, 0003-4916

February 2020

Landau levels with magnetic tunneling in a Weyl semimetal...

D. SAYKIN, K. TIKHONOV, YA. RODIONOV

Phys. Rev. B **97**, 041202(R)

January 2018

Talks & Presentation

Kerr Effect studies of CsV_3Sb_5 and ScV_6Sn_6

AMERICAN PHYSICAL SOCIETY MARCH MEETING 2024

Minneapolis, MN

March 2024

High Resolution Polar Kerr Effect Studies of CsV_3Sb_5

AMERICAN PHYSICAL SOCIETY MARCH MEETING 2023

Las Vegas, NV

March 2023

Anomalous elasticity of 2D materials beyond self-consistent approximation

AMERICAN PHYSICAL SOCIETY MARCH MEETING 2020

Denver, CO

March 2020

Landau levels with magnetic tunnelling in Weyl semimetals

SUMMER SCHOOL «MANY BODY THEORY MEETS QUANTUM INFORMATION»

Moscow, Russia

August 2018

Magnetoconductance of ballistic junction in Weyl semimetal

INTERNATIONAL WORKSHOP «LOCALIZATION, INTERACTIONS AND SUPERCONDUCTIVITY»

Chernogolovka, Russia

July 2018

Magnetic tunneling in Weyl semimetals

INTERNATIONAL CONFERENCE TO HONOR AND MEMORY OF ALEXEI A. ABRIKOSOV

Chernogolovka, Russia

June 2018

Awards

2010, 2011 **Twofold Awardee**, Physics Olympiad of Russia

Russia