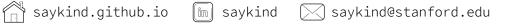
# David Saykin

PhD candidate | Research Assistant





(650) 788-9905

#### **ABOUT ME**

Stanford PhD student looking for Summer internship.

## **PROJECTS**

#### **MAGNETO-OPTICAL STUDIES OF METALS**

STANFORD UNIVERSITY 2019 - Present

I developed high-precision interferometer to measure Kerr angle in metals and applied it to study unconventional superconductors. My optical system is able to detect a change in Kerr or Faraday rotation as low as 50 nanoradians at temperatures ranging from room temperature down to 300 milliKelvin. Preliminary results are published in PhysRevLett.131.016901 and Phys. Rev. B 105, 024521

## RF MEASUREMENTS IN QUANTUM COMPUTING PROCCESSORS

BLEXIMO CORP. Summer 2022

Summer internship at quantum computing company "Bleximo". I designed and constructed qubit measurement setup which automatically calibrates vector network analyzer data using "Thru-Reflect-Line" standards. I set up and stress-tested hardware components and developed software to automate calibration process.

#### ANOMALOUS ELASTICITY OF GRAPHENE

KARLSHRUHE INSTITUTE OF TECHNOLOGY 2018 - 2019

I describe elastic parameters of 2D membranes (in particular, graphene) using perturbation theory in dimensionality of out-of-plane phonons. I develop a numerical Monte-Carlo simulation scheme to extract numerical values for critical exponent and elastic coefficients. Results are published in Phys. Rev. Research 2, 043099 and Annals of Physics 168108, 0003-4916.

#### MAGNETOCONDUCTANCE OF P-N JUNCTION IN WEYL SEMIMETAL

MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY 2016 - 2017

I analytically study Landau levels in two-cone Weyl semimetal model and find that due to magnetic tunneling between nodes spectrum posses a gap, which can be observed in Hall resistance experiment. I predict modification of the known result of large magnetocondactance of the p-n junction realized in ballistic Weyl semimetal. Results are published in Phys. Rev. B 97, 041202(R)

## **EXPERIENCE**

RESEARCH ASSISTANT STANFORD UNIVERSITY 2019 - Present

TEACHING ASSISTANT STANFORD UNIVERSITY 2019 - Present

**QUNATUM DESIGN INTERN** BLEXIMO **Summer 2022** 

**RESEARCH ASSISTANT** Landau Institute of Theoretical Physics 2015 – 2019

**TEACHING ASSISTANT** Moscow Institute of Physics and Technology 2017 – 2019

#### VOLUNTEERING

PRESIDENT STANFORD RUSSIAN-SPEAKING STUDENT ASSOCIATION 2021 - 2022

**REFEREE** JOURNAL OF THEORETICAL AND EXPERIMENTAL PHYSICS (JETP) 2019

#### **EDUCATION**

#### STANFORD UNIVERSITY

PHD IN PHYSICS 2019 - Present

# SKOLKOVO INSTITUTE OF SCIENCE AND TECHNOLOGY

MSc in Theoretical Physics 2017 - 2019 | GPA: 3.7

# **MOSCOW INSTITUTE OF** PHYSICS AND TECHNOLOGY

BSc in Applied Math and Physics 2013 - 2017 | GPA: 3.9

# SKILLS

# **QUANTUM ENGINEERING**

Low-noise transport measurement Free-standing/fiber-coupled optics Cryogenics, Low-temp thermometry Photolithography **Chemical Vapor Deposition** Machining (lathe, mill) Laboratory electronics Data acquisition and analysis

#### PROGRAMMING LANGUAGES

Python (NumPy, Pandas, TensorFlow) C • C++ • Assembler • HTML Matlab • Mathematica • LATEX  $2\varepsilon$ 

#### **COMPUTER SCIENCE**

Parallel computing (Cuda, OMP, MPI) Monte Carlo simulations Machine Learning

#### **TOOLS**

Git • Linux shell • GPIB

#### LANGUAGES

English (advanced) • Russian (native)