

Matei Jordache

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SUMMARY

Curious, creative, pragmatic engineer with a talent for fixing problems and making things work. Comfortable solving interdisciplinary issues and working in teams of various sizes. Able to quickly learn and build new tools, using technology as appropriate to resolve problems at hand. Builder at heart.

SKILLS

Digital: C, C++, Python, Igor, KiCad, Altium, FreeCAD, Solidworks, embedded, SPICE, FEM, git, Blender, T_EX

Physical: PCBA bring-up, verification, test equipment, rapid prototyping, DFM, 3DP, hand & power tools, tinkering

RELEVANT WORK

- 2019 - present **Product Engineer** **Asylum Research AFM**
- Member of the core design team for new and existing AFM product lines and accessories
 - Engineer low cost, high performance system components including sensitive analog and mixed-signal electronics, motor control, positioning systems, sensors, instrumentation
 - Design and build tooling, fixtures for faster, more reliable builds, testing, data collection, analysis
 - Work with contract manufacturers to design, test and validate custom metrology equipment
 - Designing for sheet metal, machining, chemical etch, EDM, FDM, SLS, SLA fabrication methods
 - Experience with designing multi-layer & multi-board PCBAs, flex, rigid-flex, opto-electro-mechanical assemblies, cable harnesses, simulation, and BOM optimization
 - Development of embedded firmware for integration into complex imaging systems.
- Service & Manufacturing Engineer**
- Use common repairs as basis for creating ECOs, making future repairs less frequent and cheaper
 - Interface with international teams for training and supporting engineering changes
 - Primary contributor and maintainer of internal, revision controlled service documentation
- 2021 - 2022 **Fab Manufacturing Engineer** **Keysight Technologies**
- Tool manager of thin film coating equipment for producing interferometer optics
 - Maintain, upgrade, and commission e-beam evaporators, sputtering chambers, vacuum ovens, ellipsometers, spectrometers, optical polishing and characterization tools, test equipment
 - Built a database for managing service part inventory, service logs, preventative maintenance
 - Design and physical layout of new class 10 cleanroom with optimization for process handling.

RESEARCH

- 2018-2019 **Research Assistant** **Frolov Nanoscale Quantum Matter Lab**
- Design, fabricate, characterize nanowire devices with patterned electrodes using maskless alignment, e-beam evaporation, atomic layer deposition, dilution refrigerator, test equipment
 - Design and integration of custom microwave probe inside dilution refrigerator
 - Plan and implement new closed loop chiller system for three dilution refrigerators
- 2017-2018 **Research Assistant** **Fullerton Nanoelectronics and Ionics Lab**
- Exfoliation, characterization, of $MoSe_2$ few-layer flakes using AFM and optical methods
 - Construction of 2D memory-like devices using unique ionic electrolyte

EDUCATION

- 2014 - 2018 **Bachelor of Science in Chemical Engineering** **University of Pittsburgh**
- 1st place prize, OXE Research Competition, 2018
 - WPTS FM Radio Engineering Director, 2017 - 2018

INTERESTS

Repair (and right to repair!), open source hardware, computers, knitting, test equipment, eurogames, old junk

REFERENCES

- Matt Klonowski, matt@photothermal.com
- Lars Freising, lars.freising@oxinst.com
- Sergey Frolov, frolovsm@pitt.edu
- Susan Fullerton, fullerton@pitt.edu