Rose Kitz

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Creative and team-centered transducer engineer developing automotive loudspeakers at Bose – specification, supplier management, acoustic measurement, and OEM validation – with a background in electroacoustic test software, robotics, and hands-on fabrication.

PROFESSIONAL EXPERIENCE

Transducer Engineer – Automotive, *Bose Corporation (Framingham, MA)* **Apr. 2025 - Present**

- Develop specifications for, source, and qualify new loudspeakers, collaborating with global engineering teams to integrate into systems to support OEM customers across the program lifecycle, from initial feasibility through mass production
- Drive suppliers and CMs through design, development, and validation via written technical reports, inc. 8D root-cause investigations and drawing/specification consistency
- Measure transducers and vehicle acoustic systems – inc. impedance, frequency response, distortion, and Klippel linear/large-signal parameters (LPM, LSI) – analyze acoustical data in MATLAB, and conduct critical listening evaluations
- Lead failure analysis with lab technicians – audible defects (rub & buzz) and environmental test failures (temperature, humidity, vibration) – and competitive analysis of transducers
- Build equivalent-circuit simulations and acoustic, structural, and electromagnetic (motor/BL) FEA models of transducers and systems to inform design decisions
- Selected to train as SME for acoustic measurement best practices, ensuring consistency across internal & external labs; mentor a co-op engineer and document team processes for onboarding
- Take initiative to prototype & develop new tools to improve processes and close capability gaps
- Verify designs against loudspeaker standards and OEM validation requirements, and drive acoustic approval for DV/PV builds, coordinating with manufacturing, systems, mechanical, electrical, quality, acoustic/environmental test, and supply chain teams to document and ensure product success
- Lead Women@Bose Social Impact team (5+ events/year – STEM outreach, volunteer and donation drives); co-organize Women in Engineering panel with senior leaders, mentor through cross-company and university programs, and represent Bose at the annual SWE conference

LabVIEW Software Engineer, *Listen, Inc. (Boston, MA)* **Jul. 2024 - Mar. 2025**

- Coded audio algorithms, virtual instruments, and UIs for SoundCheck, an industry-standard electroacoustic test system
- Built, tested, and debugged large-scale LabVIEW software on Scrum team, inc. interfacing with audio meas. hardware
- Collaborated with DSP, hardware, and support engineers; documented specs/designs/processes to ensure product quality

Systems Test Engineering Intern, *iRobot (Bedford, MA)* **May - Aug. 2023**

- Rapidly prototyped a test fixture and scripts, collected data, and analyzed results to inform a critical manufacturing decision
- Independently adapted and ran system tests on a near-production robot, adopting technician-level test & measurement practices; documented and shared results to key stakeholders to validate updated design decisions
- Found, reported, and drove two software bugs to resolution on time-sensitive release
- Designed, modeled (CREO), and built proof-of-concept of a modular, cost-reduced test fixture for new product; prototyped to-scale modules with durability, cost, and technician usability in mind

ADDITIONAL EXPERIENCE

Electronics & Controls, Robotics Learning Assistant, *Tufts Mechanical Engineering* **Sep. – Dec. 2023**

- Enabled students to learn to debug robotic systems, design custom PCBs, and design based on component specifications
- Recognized with dept. teaching award from professors, for outstanding ability to meet students where they are in learning

Fabrication Specialist, *Nolop FAST Facility (Tufts Makerspace)* **Sep. 2022 – May 2024**

- Welcomed and trained community members on safe, effective use of shop tools; advised iterative design process
- Maintained equipment/inventory, kept space tidy, and led workshops, fostering belonging for all (featured on TuftsNow)

Future Educational Technologies Lab Intern for Chris Rogers, *Tufts Center for Eng. Education and Outreach* **Jul. – Aug. 2022**

- Developed and documented MicroPython methods for MIDI over BLE/USB with LEGO SPIKE Prime robotics kit, enabling students to build sensor-driven wireless musical instruments (i.e., a realistic LEGO trombone)

SELECTED PROJECTS

Brass Soprano Trombone (see docs), *Independent Project* **Spring 2024**

- Planned, designed, fabricated, tested, and analyzed acoustic characteristics of a working brass trombone in four months for <$140, iterating from bell to slide bugle to full instrument; learned to play and composed a piece to showcase its capabilities

The Sledgehammer Kablammer (featured on TuftsNow, see docs), *Electronic Instrument Design Group Project* **Fall 2023**

- Led hardware, software, sensor integration, and mechanical design of an electronic musical instrument built from scratch, debugging the full signal chain from sensors to MCU to MaxMSP to Reason (DAW) to sound
- Consulted with interdisciplinary teammates (music, eng. psych.) on sound and user interface/interaction design

SELECTED PROJECTS, cont.

Helmholtz Absorber – Design, Fabrication, & Test, *Acoustics Group Project* **Spring 2024**

- Led design and fabrication of 115-Hz Helmholtz absorber (target ≥3 dBRMS attenuation, <$70) for use in recording studio
- Diagnosed and resolved absorption failure through acoustic test & analysis with teammates

Frequency Analysis to Detect Bike Problems, *Instruments & Experiments Group Project* **Spring 2024**

- Built a low-cost, accelerometer-based vibration measurement system (Arduino/LabVIEW) integrated on bike to collect data
- Classified bike faults via principal component analysis of power spectra (MATLAB) with 98% accuracy

SKILLS

Acoustic Test & Simulation: MATLAB, equivalent circuit modeling (Simulink/Simscape), Klippel, SoundCheck, Audio Precision, FEA (ANSYS, Maxwell, COMSOL, Solidworks, OnScale), critical listening, CATT Acoustic, MaxMSP, Reason, Audacity

Programming: MATLAB, LabVIEW, Python (NumPy, Pandas, Matplotlib), MicroPython, R, Arduino

CAD & Fabrication: CREO, NX, SolidWorks, Onshape, KiCad; lathe, mill, welding, brazing, sheet metal, laser cutting, 3D printing, soldering, woodworking

Electronics: PCB design, circuit debugging, Raspberry Pi/Arduino, MIDI over BLE, image processing (OpenCV)

Process & Tools: 8D problem solving, Agile/Scrum, Jira & Confluence, version control (Perforce, GitHub), Windchill

Music/Language: Jazz performance & improvisation (tenor saxophone, clarinet), transcription, critical listening; Spanish, Italian

EDUCATION

B.S. Mechanical Engineering, minor in Music Engineering (Acoustic Instrument Design) **May 2024**

Tufts University (Medford, MA) | GPA 3.89, Dean's List all semesters

- 4-yr Varsity XC/T&F (Captain '23-24, Sportsmanship Award Nominee '24, Most Improved '23, 2-yr Conference All-Sportsmanship Team, Green Dot & SAAC Rep); 3-yr student mechanic & comms. director at Tufts Bike Shop
- ME Undergraduate Teaching Award; Society of Women Engineers Executive Board (3 yrs); ASME; ABET Committee

Relevant Courses: Acoustics, Architectural Acoustics, Musical Instrument Design & Manuf., Electronic Musical Instrument Design, Electronics & Controls, Music Psych, Design for Fabrication, Robotics, Human Factors Eng., Public Speaking

Tufts-In-Pavia Data Science & Italian Program, *University of Pavia (Pavia, Lombardy, Italy)* **July 2022**