Christopher Kniss

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EDUCATION

Ph.D. in Electrical Engineering (Direct Ph.D. Program) **Fall 2025 – Present**
University of Massachusetts Amherst *Amherst, MA*
- Advisor: Dr. Rod Kim
- Research Assistantship

B.E. in Computer Engineering (with Highest Honors) **Graduated May 2025**
Stevens Institute of Technology *Hoboken, NJ*
- Concentration: Electronics & Embedded Systems
- Minor: Physics
- Cumulative GPA: 3.959

WORK EXPERIENCE

NIST SURF Program Intern **May 2025 – August 2025**
National Institute of Standards and Technology *Gaithersburg, MD*
- Developed PCBs in Altium Designer for cryogenic chamber applications
- Gained hands-on experience with probing stations, vector network analyzers, oscilloscopes, and signal generators
- Enhanced laboratory skills for cryogenic and non-cryogenic environments
- Presented research findings at NIST SURF Colloquium in July 2025

Undergraduate Research Assistant, SINE Lab **January 2024 – May 2025**
Stevens Institute of Technology *Hoboken, NJ*
- Contributed approximately 15 hours per week in laboratory work and weekly meetings
- Studied economic implications in RFIC design, fabrication, and implementation
- Funded by Provost's Office of Undergraduate Research

Teaching Assistant, Electronic Circuits Course **September 2023 – December 2023**
Stevens Institute of Technology *Hoboken, NJ*
- Hosted optional recitations for a class of 44 students with consistent attendance of 20–30 students
- Graded assignments and proctored examinations
- Crafted practice problems and planned recitations reviewing important course content

RESEARCH ACTIVITY

Analog Folding Amplifier Operational up to 100 MHz *May 2024 – Present*
- Designed amplifier prototype and simulated in Cadence
- Applied device physics principles to debugging and transistor sizing
- Improved independent study, circuit design, and project management skills
- Frequent meetings with Dr. Rod Kim; delegated tasks to peers for progress acceleration
- Presented poster at Spring 2025 research event, Stevens Institute of Technology

High-Temperature Alumina Fiber Waveguide *September 2023 – December 2023*
- Conducted extreme temperature experiments up to 1100°C
- Characterized S-parameters using vector network analyzer
- Performed laboratory demonstrations and presentations at iCNS Launch Event

PUBLICATIONS

Temperature-Compensated Multi-Level CMOS Modulators Operating from 10 K to 300 K for Cryogenic Interconnects

Christopher Kniss, Abhishek Sharma, Ratanak Phon, Gregory Shimonov, Eran Socher, Pragya R. Shrestha, Karthick Ramu, Jason P. Campbell, Amin Pourvali Kakhki, Richard Al Hadi, Rod Kim
IEEE Journal of Microwaves (JMW), October 2025

Ceramic Fiber Interconnects Beyond 1000°C Enabled by Automatic Gain Compensated Millimeter-Wave CMOS Transceivers
Abhishek Sharma, Christopher Kniss, Ratanak Phon, Rod Kim
2025 IEEE International Symposium on Circuits and Systems (ISCAS), pp. 1–5, May 2025

SKILLS

Software: Cadence, Git, Altium Designer, Renesas E2 Studio, MATLAB, Vivado, Arduino, SolidWorks, MS Office
Programming: C and C++ (Experienced), Linux CLI, VHDL, x86 and ARMv8 Assembly, Java (Proficient)

AWARDS & HONORS

- Dean's List — Stevens Institute of Technology
- Edwin A. Stevens Scholarship — Stevens Institute of Technology
- Provost's Office Undergraduate Research Fund — Stevens Institute of Technology
- Tau Beta Pi — Alpha Chapter
- IEEE Eta Kappa Nu (HKN)