LINTO THOMAS

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PROFESSIONAL SUMMARY

Analog IC Design Engineer candidate with a 4.0 GPA in Computer Engineering and hands-on experience designing, simulating, and documenting integrated circuits — op-amps, transistor amplifiers, comparators, oscillators, and power-management topologies. Combines classical electrical engineering fundamentals with applied AI/ML programming skills — Python-driven circuit optimization, statistical analysis of design parameters, and GPU-accelerated ML pipelines. Eager to take initiative and implement novel ideas in an interdisciplinary analog + AI semiconductor team, driving intelligent design automation across power supply, linear, and interface applications.

EDUCATION

Master of Science – Computer Engineering Aug 2024 – May 2026
University of North Texas, Denton, TX | GPA: 4.0/4.0 | Phi Kappa Phi Honor Society

Bachelor of Science – Physics Nov 2020 – Mar 2024
St. Joseph's Autonomous College, India
Strong foundation in electromagnetic theory, signal behavior, and physical modeling underpinning analog IC design.

Relevant Coursework: Analog Electronics, Signals & Systems, Embedded Systems, Machine Learning, Computer Architecture

TECHNICAL SKILLS

- **Analog Design:** Op-amps, Transistor Amplifiers, Comparators, Feedback Networks, Oscillators, Rectifiers, Voltage Regulators, LDO, ADC/DAC (coursework), RC Integrators/Differentiators, Bandgap Reference (coursework), Schematic Design & Documentation
- **IC Design:** Integrated Circuit design concepts, IC layout fundamentals, digital design basics, statistical analysis, corner analysis, post-layout simulation concepts
- **Simulation Tools:** LTspice (transient, AC, parametric sweep), Cadence Virtuoso ADE & SPECTRE (training in progress via Cadence Learning Center), Python-LTspice automation
- **AI / ML:** Python, NumPy, Pandas, PyTorch, TensorFlow, scikit-learn, Matplotlib, Detectron2, Neural Networks, Graphs, Regression, Clustering, Decision Trees
- **Systems & Cloud:** Linux, AWS EC2 (GPU), ROS 2, Git, C, C++
- **Soft Skills:** Analytical Thinking, Cross-functional Collaboration, Technical Communication, Debugging, Self-directed Learning, Initiative, Leading Projects

PROJECT EXPERIENCE

Analog Circuit Design & Simulation

- Designed and simulated a suite of analog circuits in LTspice: inverting op-amp configurations, transistor-based amplifiers, RC integrators/differentiators, and oscillator topologies — directly paralleling standard analog IC product domains (audio, linear, power)
- Implemented feedback networks and verified gain accuracy, signal inversion, and frequency response via transient and AC analyses
- Configured ±15V dual-supply rails; performed iterative parameter tuning to optimize gain and minimize distortion, demonstrating the empirical optimization methodology used in AI/ML-assisted design flows
- Conducted corner-like analysis by sweeping component tolerances to assess circuit robustness — foundational to statistical design verification in IC development

AI-Assisted Circuit Optimization

- Building a Python workflow that closes the loop between LTspice SPICE simulations and ML-driven parameter search — directly analogous to AI/ML-enabled IC design flows
- Automating resistor and bias value sweeps to meet target gain and performance metrics, reducing manual iteration cycles
- Exploring regression and gradient-based optimization techniques (scikit-learn / NumPy) to converge on Pareto-optimal circuit parameters faster than manual design
- Currently porting workflow to support Cadence SPECTRE netlist output as a backend, enabling direct compatibility with Virtuoso ADE/Maestro environments — actively learning Virtuoso ADE via Cadence Learning Center to validate the integration

Pupil Analysis ML Pipeline

- Developed a real-time video-based pupil detection pipeline using Mask R-CNN (Detectron2), demonstrating end-to-end ML pipeline ownership from data ingestion through inference
- Processed time-series pupil-diameter signals — equivalent signal-processing mindset applied to analog waveform data in EDA tools
- Deployed and managed GPU-accelerated workloads on AWS EC2; automated preprocessing and execution pipelines, improving reproducibility — skills transferable to large-scale circuit simulation runs

PROFESSIONAL EXPERIENCE

Research Assistant — Pupillometry & Computer Vision Aug 2024 – Present

Loyola University Chicago (Remote) | Supervisor: Dr. Bruce Gaynes

- Developing a video-based pupillometry pipeline to measure and quantify pupil light response (PLR) in patients before and after eye surgery — results contributing to a peer-reviewed publication with co-authorship credit
- Built ML-driven pupil detection and diameter extraction system using Mask R-CNN (Detectron2) applied to clinical video footage, enabling automated before/after comparison of pupil stimulus response
- Engineered time-series signal processing pipeline to extract, clean, and analyze pupil diameter data across stimulus events — translates directly to analog waveform analysis and parametric measurement in IC design
- Deployed and managed GPU-accelerated inference on AWS EC2; automated end-to-end data processing pipeline improving reproducibility and throughput for clinical dataset analysis

Math Tutor Dec 2024 – Present

Tutor.com

- Deliver structured problem-solving sessions; hones verbal and written communication skills essential for presenting design decisions to engineering product teams

ANALOG ELECTRONICS LABORATORY EXPERIENCE

Hands-on bench and schematic design experience with the following integrated circuit building blocks — directly mapping to standard analog IC product domains:

- **Power & Regulation:** Rectifiers, voltage regulators, power supply circuits — translates to LDO/DCDC IP familiarity
- **Amplification:** Transistor amplifiers, op-amp configurations, comparators — gain analysis, frequency response, schematic documentation
- **Signal Processing:** RC integrators, differentiators, oscillators — timing and signal-conditioning ICs
- **Analysis:** Statistical and corner-like evaluation using bench instruments; drawing and documenting schematics; iterative component tuning across digital and analog domains

CERTIFICATIONS & RECOGNITION

- Phi Kappa Phi Honor Society
- CompTIA Security+ (In Progress)
- AWS Certified Solutions Architect (In Progress)
- Google Cybersecurity Professional Certificate