STRENGTHS

Experimental discipline
Built repeatable cable tests, checked setup conditions, and revisited unexpected readings until evidence supported a clear conclusion.

Analytical problem solving
Used MATLAB plots and controlled changes to separate likely causes when cable measurements did not agree.

Technical communication
Turned methods, assumptions, limitations, and results into concise reviews that faculty and peers could follow.

Collaborative laboratory work
Shared equipment, demonstrated procedures, and helped lab partners keep testing organized under time limits.

Learning agility
Moved from classroom measurements into cable characterization with curiosity, safe equipment use, and steady ownership of deliverables.

SKILLS

Cable testing | Laboratory validation | Design of Experiment | MATLAB | Simulation | Oscilloscopes | Digital multimeters | Test method development | Data analysis | Troubleshooting | Technical communication

Jasper Matthews

R&D Cable Intern

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SUMMARY

Electrical Engineering student preparing for **cable research and development** work through supervised laboratory research, academic design projects, and structured testing. Current work includes **copper cable** characterization, impedance and attenuation measurements, MATLAB simulation, oscilloscope use, multimeter measurements, and repeatable data collection. Built **Design of Experiment** plans that examine conductor length, termination condition, and frequency effects. Drafted test procedures, organized technical records, investigated inconsistent readings, and presented findings with clear assumptions and limitations. Collaborative lab work has included technician style support, safe equipment use, shared scheduling, and peer instruction. Coursework and project delivery have strengthened analytical problem solving, technical communication, initiative, accountability, and **learning agility**. Ready for a project based internship where careful testing and clear engineering evidence support better connectivity products.

EDUCATION

Bachelor's Degree in Electrical Engineering

Purdue University GPA: 4.0 2027 West Lafayette, IN

Coursework: *Circuit analysis, signal systems, cable design, engineering experimentation*

TECHNICAL SKILLS

- **Cable Testing:** Copper cable, fiber optics, cable characterization
- **Laboratory Instruments:** Oscilloscopes, digital multimeters, function generators
- **Electrical Measurement:** Impedance, attenuation, voltage measurement
- **Simulation Tools:** MATLAB, signal modeling, response plots
- **Experimental Design:** DOE, controlled trials, variable screening
- **Test Development:** Test methods, written procedures, verification checklists
- **Data Analysis:** Measurement trends, technical figures, uncertainty review
- **Circuit Testing:** Continuity checks, current measurement, circuit assembly
- **Documentation Tools:** Engineering notebooks, formal reports, data records
- **Presentation Tools:** Technical presentations, laboratory reviews, project demonstrations
- **Safety Practices:** Laboratory safety, equipment handling, supervised testing
- **Connectivity Products:** Data cables, transmission lines, broadband networks

EXPERIENCE

Undergraduate Cable Characterization Researcher

University Research Lab January 2026 - Present West Lafayette, IN

Conduct supervised cable research through bench testing, **simulation**, procedure development, and **technical reporting**. Supports faculty led investigations by building repeatable test setups, reviewing data quality, and sharing findings with laboratory partners.

- Built bench setups measuring impedance, **attenuation**, and signal behavior across six **copper cable** samples.
- Created **DOE** matrix testing conductor length, termination condition, and frequency effects consistently.
- Wrote MATLAB scripts organizing readings and plotting response trends for faculty review.
- Drafted cable **test procedure** covering setup, checkpoints, and data recording conventions.
- Demonstrated new procedure steps to two lab partners during supervised testing.
- Investigated inconsistent readings through connection checks, setting reviews, sample preparation, and repeated trials.
- Presented findings, assumptions, limitations, and follow up tests during laboratory review.

Electrical Engineering Cable Design Project

Capstone Project September 2025 - May 2026 West Lafayette, IN

Cable design | Technical curiosity | Collaboration | Accountability

LANGUAGES

English — Native

Spanish — Intermediate

MY CAREER

- Undergraduate Cable Characterization Researcher at University Research Lab (8 Months)
- Electrical Engineering Cable Design Project at Capstone Project (8 Months)
- Electrical Engineering Laboratory Project Contributor at Student Lab (7 Months)

Coordinated a four person **cable design** study focused on performance questions, controlled validation, simulation comparison, and evidence based recommendations. Connected project planning with practical laboratory work and faculty **communication**.

- Defined cable performance questions, test criteria, and semester schedule with four teammates.
- Modeled cable behavior in **MATLAB** and compared **simulation** outputs with laboratory measurements.
- Evaluated conductor arrangements and termination alternatives through controlled bench testing.
- Recorded test conditions and measurements in a shared engineering notebook.
- Created verification checklists for prototype preparation and instrumentation setup repeatability.
- Prepared technical figures linking experimental evidence with recommended cable configuration.
- Delivered capstone demonstration explaining methods, assumptions, limitations, and next steps.

Electrical Engineering Laboratory Project Contributor

Student Lab | January 2025 - August 2025 | West Lafayette, IN

Completed supervised electronics laboratory work involving circuit assembly, measurement, troubleshooting, safety practices, formal reporting, and team coordination. Built foundational habits for reliable testing and clear technical communication.

- Completed circuit experiments involving assembly, continuity checks, voltage measurements, and current measurements.
- Used **oscilloscopes**, function generators, power supplies, and **digital multimeters** safely.
- Recorded conditions and measurements in formal reports linking calculations with observations.
- Repeated measurements after isolating setup **inconsistencies** through controlled changes.
- Coordinated equipment access and task sequencing with lab partners during experiments.
- Presented selected results in class and addressed measurement uncertainty and repeatability.
- Applied structured **troubleshooting** when observed readings differed from expected circuit behavior.

PROJECTS

Copper Cable Variable Study 2026

Some cable results look simple until variables are separated. Built a controlled study examining conductor length, termination condition, and frequency through DOE planning, MATLAB analysis, and laboratory measurements.

Low Voltage Data Cable Validation 2026

A useful design decision begins with evidence, not preference. Compared simulated and measured cable behavior, created verification checklists, and documented findings supporting a recommended configuration.

LEADERSHIP & AWARDS

- Dean's List, Purdue University, 2025 to 2026
- Undergraduate Engineering Project Showcase Finalist, 2026
- College of Engineering Academic Merit Scholarship, 2025

CERTIFICATIONS

- MATLAB Onramp 2026
- Laboratory Safety Fundamentals 2025

PROFESSIONAL AFFILIATIONS

- Electrical and Computer Engineering Student Society, Project Team Member, 2025 to Present
- Engineering Peer Study Group, Volunteer Facilitator, 2026 to Present

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST