

# Cole Thomas

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U.S. Citizen

## EDUCATION

**Pennsylvania State University**, University Park, PA

Expected Graduation: May 2027

*Bachelor of Science in Mechanical Engineering*

GPA: 3.50

Dean's List: Spring 2025, Fall 2025, Spring 2026

## ENGINEERING WORK EXPERIENCE

*NiSource, Columbia Gas of Virginia*

May 2025 – Present

### Field Engineer (Intern & Part-Time)

- Own end-to-end design for a \$4.5M gas distribution system serving a 460-home subdivision, building the design package and cost estimate and negotiating scope with the developer and internal departments; currently in customer approval
- Carried a pipeline design project from estimation through release, producing the AutoCAD drawings, bill of materials, and operations list, and securing financial approval
- Released 22 vehicular protection work orders across Virginia by standardizing the estimation and SAP build process, clearing the initiative's backlog
- Rebuilt 8 active projects in SAP during a companywide ERP migration, restoring full scope, BOM, and cost data in the new system
- Contributed to 15 pipeline design projects totaling \$9.1M in scope through drafting, post-review revisions, and SAP setup

## MECHANICAL ENGINEERING PROJECTS

### Penn State ASME Combat Robotics: *Team Lead*

2025 – 2026

- Led a 31-person team across four subsystems to a 2nd of 17 finish at ASME Combat Robotics 2026, delivering a 6 lb horizontal overhead-spinner robot within a \$1,000 budget & \$500 bot-value cap
- Derated the weapon motor from a ~3000 J theoretical maximum to 486 J using  $KE = \frac{1}{2}I\omega^2$  to size angular velocity, landing 14 J under the competition's 500 J cap
- Architected the bot around a modular chassis with a quick-swap armor ring & a 0.25" AR500 weapon, enabling quick armor replacement between matches
- Reviewed subsystem FEA results & trained team members to interpret them, catching a weapon design members had cleared that showed peak stress 5x the material's limit
- Co-authored a 30-page rules & safety package & an 8-page electronics reference, securing Penn State approval for shop access, workspace, & event promotion

### Design Methodology Coursework Project: *3 Person Team, CFD Lead* Spring 2026

- Redesigned the body for a 1:32-scale Tamiya Mini 4WD chassis, cutting average lap time 9.8% below baseline through surface modeling & iteration in AutoDesk Fusion
- Ran SolidWorks CFD on three candidate geometries in SolidWorks & correlated results to wind tunnel data within 10%, establishing that aerodynamic forces were under 0.5% of driving force
- Redirected the design toward weight & stability after testing disproved the team's aero-first assumption, producing the team's fastest configuration

## LEADERSHIP & ATHLETIC ACTIVITIES

### ASME Design Team: *Design Director*

2026 – 2027

- Mentor 14 project leads across 11 design teams by sitting in on project meetings & delivering feedback on execution, escalating to one-on-ones when teams are off track
- Serve as the design team's primary faculty liaison for non-competition projects, coordinating with the competitions & events directors on club operations

### Penn State Club Track & Field: *Discus thrower*

2024 – Present

- Ranked 6th all-time in club history, competed in 4 collegiate meets

## TECHNICAL SKILLS

**CAD:** SolidWorks, AutoDesk Fusion, AutoCAD

**FEA / CFD:** SolidWorks Simulation & Flow Simulation

**Programming:** C++, MATLAB

**Electrical:** Li-ion pack assembly, cell selection, spot welding, BMS integration, brushless motors & ESCs

**Fabrication:** Manual & CNC mill & lathe, waterjet, FDM 3D printing, soldering

**Software:** SAP (Project Setup, BOMs, ERP Migration)