

Ivan O'Brien

Junior Mechanical Design Engineer, Product Design

☎ (919) 555-6384 ✉ ivanobrien@example.com 💼 linkedin.com/example/ivanobrien 📍 Raleigh, NC 27601

SUMMARY

Junior Mechanical Design Engineer with hands on experience supporting **product development** from concept modeling through prototype testing and design updates. Creates detailed 3D models and technical drawings with SolidWorks, Rhino3D, and AutoCAD. Supports ergonomic design, manufacturability reviews, measurement activities, 3D printing, and **engineering documentation**. Works closely with manufacturing and engineering stakeholders during design reviews, prototype builds, and product improvement efforts. Applies **mechanical design principles**, structured problem solving, and clear communication when evaluating fit, performance, and reliability. Experience at Pioneer Design Labs and Carolina Product Innovation Center provides a practical foundation for onsite collaboration, project execution, and **continuous improvement**. Ready to contribute thoughtful design work, dependable documentation, and useful prototype feedback within a product development team.

EXPERIENCE

Junior Mechanical Design Engineer, Product Development

Pioneer Design Labs 📅 July 2025 - Present 📍 Raleigh, NC

Supports product component development through **CAD** modeling, drawing creation, prototype review, **engineering documentation**, and design discussions with manufacturing and engineering partners. Contributes at an early career level across product improvement work, fit evaluation, testing observations, and reliability focused design updates.

- Created **SolidWorks** models and **AutoCAD** drawings for product component revisions.
- Prepared prototype models and reviewed fit requirements before build activities.
- Evaluated concepts with measurement tools and manufacturing feedback for design decisions.
- Documented product revisions and design updates for engineering review.
- Coordinated design discussions with **manufacturing** and engineering stakeholders.
- Applied **mechanical design principles** to improve prototype performance and reliability.

Mechanical Design Engineer Intern, Product Development

Carolina Product Innovation Center 📅 May 2024 - June 2025 📍 Durham, NC

Supported supervised **product development** assignments through Rhino3D and SolidWorks modeling, prototype evaluation, testing documentation, manufacturing reviews, and organized CAD records. Built practical experience translating engineering analysis into design adjustments and useful project team documentation.

- Created **Rhino3D** and SolidWorks models for supervised product assignments.
- Supported **3D printing** activities and reviewed prototype evaluation results.
- Documented testing observations and proposed practical design adjustments.
- Reviewed manufacturing constraints during early concept development.
- Organized CAD files and technical documentation for project teams.
- Applied engineering analysis methods to resolve component design challenges.

PROJECTS

Ergonomic Product Prototype Study 📅 2024

Explored ergonomic form, fit, and performance through CAD concepts, prototype builds, measurement activities, and design reviews. Personal curiosity about user comfort shaped practical evaluation choices and strengthened product design judgment.

Manufacturing Ready Component Development 📅 2025

Developed a component concept with SolidWorks and Rhino3D, then reviewed printing results, manufacturing constraints, and technical documentation. Each revision offered a clear lesson about balancing performance, fit, and production needs.

LEADERSHIP & AWARDS

- SolidWorks Associate Certification recognition, 2025
- Mechanical Engineering design project recognition, North Carolina State University, 2024
- Product development collaboration recognition, Pioneer Design Labs, 2026

EDUCATION

Bachelor's Degree in Mechanical Engineering

North Carolina State University 🎓 GPA: 3.5 📅 2024 📍 Raleigh, NC

Coursework: Mechanical design, manufacturing processes, engineering analysis, product development

CERTIFICATIONS

- SolidWorks Associate Certification 📅 2025
- AutoCAD Design Foundations Certificate 📅 2024

TECHNICAL SKILLS

- **CAD Software:** SolidWorks, Rhino3D, AutoCAD
- **Prototype Methods:** 3D printing, CNC machining, prototype builds
- **Measurement Methods:** 3D scanning, measurement tools, fit evaluation
- **Engineering Documents:** Technical drawings, design revisions, engineering documentation
- **Design Methods:** Concept development, ergonomic design, mechanical design
- **Manufacturing Skills:** Manufacturing processes, manufacturability review, production feedback
- **Testing Methods:** Prototype testing, performance evaluation, test observations
- **Product Development:** Product improvement, design cycle, continuous improvement
- **Engineering Analysis:** Component analysis, problem solving, reliability evaluation
- **Project Coordination:** Project planning, project execution, design reviews
- **Collaboration Tools:** Manufacturing collaboration, engineering collaboration, stakeholder reviews
- **Production Support:** Production coordination, process improvements, product reliability

SKILLS

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|----------------|---------------------------|------------------------|------------------------|
| • CAD Modeling | • Product Development | • Technical Drawings | • Problem Solving |
| • SolidWorks | • Prototype Testing | • Mechanical Design | • Engineering Analysis |
| • Rhino3D | • Manufacturing Processes | • Ergonomic Design | • Project Planning |
| • AutoCAD | • 3D Printing | • Design Documentation | |

PROFESSIONAL AFFILIATIONS

- North Carolina State University Mechanical Engineering community
- Product design and manufacturing engineering peer network
- Raleigh engineering and product development community

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST