Joseph C. Caswell

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Professional Summary

With 10+ years in design automation (SOLIDWORKS, DriveWorks) and web development for manufacturing, I have a track record of creating impactful solutions, from custom DriveWorks plugins and project templates to full system automations. Eager to contribute to a New Zealand tech company focused on practical automation and process optimisation.

Skills

- **CAD/Automation:** DriveWorks, SOLIDWORKS, FEA Simulation
- **Web/Programming:** HTML, CSS, JavaScript, TypeScript, Markdown, PHP, JSON, XML, VB/VBA, C/C++/Arduino
- **Tools:** IIS, Figma, VS Code/Cursor, GitHub, Wiki.js, DokuWiki, CPanel, Microsoft 365, Google Drive, GIMP
- **Soft Skills:** Project Management, Technical Support & Training, UI/UX Design, STEM Education & Mentoring

Professional Experience

Technical Solutions Consultant

TPM | Greenville, SC, USA / Whangārei, NZ (Remote) | October 2021 – Present
Full-time until April 2025; currently part-time independent contractor (remote) due to relocation Consultancy for a SOLIDWORKS & DriveWorks Value-Added Reseller (VAR), focusing on design automation, UI/UX, and web technologies.

- **Internal Process development for optimising DriveWorks deployment and efficiency**
  - Dramatically improved UI development efficiency in DriveWorks by creating a custom plugin that provided dynamic access to 14,000+ SVG icons, eliminating manual icon management and reducing project file clutter.
  - Developed a comprehensive DriveWorks unit conversion plugin supporting 162 units across 17 types (e.g., length, mass, temperature, file size), promoting DRY principles and enabling robust, error-free calculations for engineering, internationalization, and UI design.
  - Addressed critical gaps in DriveWorks' native user management by a creating project with secure, web-based self-service account capabilities (registration, password reset, email verification) and robust administrative oversight, leading to improved security, reduced admin workload, and greater user independence for multiple deployments.
  - Pioneered UI/UX processes, including use of Figma for rapid prototyping and CSS for custom styling in DriveWorks and Integration Theme
  - Presented UX Design Process at DriveWorks World 2024
  - Established self-hosted tools including internal knowledge wiki and AI RAG tooling
  - Extended capabilities of DriveWorks' Corporate Site template, and implemented and maintained 20+ sites
- **End-to-end DriveWorks implementation and automation**
  - Led full project lifecycle from requirements gathering to deployment and training
  - Automated SOLIDWORKS, email, and document processes for improved efficiency
  - Developed custom device-responsive branded user interfaces
  - Implemented public, private, and DMZ DriveWorks Live sites
  - Created comprehensive documentation and training materials
- **Delivered training and technical support for SOLIDWORKS**

– Supported WNC SOLIDWORKS User Group as a reseller, including custom training and presentations

Tool Designer

Kearfott Corporation | Black Mountain, NC, USA | March 2021 – October 2021 *Defence manufacturer of hyper-precise guidance systems; designed tooling for low-volume, hand-assembled components.*

- Designed, modelled, and drafted tooling for hyper-precision guidance systems used by American and Korean militaries
- Developed tools to measure accuracy and assist with high-precision hand assembly
- Collaborated closely with CNC programmers and machinists to achieve cost-efficient, tight-tolerance manufacturing

Tool Designer

Auria Solutions | Old Fort, NC, USA | October 2017 – March 2021 *Global Tier 1 automotive supplier (vehicle interiors & insulation); designed tooling for high-volume, automated manufacturing processes.*

- Spearheaded process optimization initiatives, including:
    - Incorporating additive manufacturing into prototyping and production workflows
    - Developing custom SOLIDWORKS and Excel macros/templates to automate and accelerate design tasks
    - Creating custom Excel and CMD applications for simulation and data management
    - Using ProCAST simulation to optimize injection molding designs, reducing machining time and minimizing shot waste
- Designed, modelled, simulated, and drafted automotive manufacturing tools
- Generated CAD files for CNC machining and operated 3D printers for prototyping
- Designed and developed a website for internal software training materials
- Participated in a Kanban project that contributed to $2+ million in annual savings for a single facility

Engineering Intern

EMC of NC, Inc | Wake Forest, NC, USA | May 2014 – August 2014, May 2015 – August 2015

- Led full lifecycle digital transformation from paper inventory to online, mobile-friendly automated system using PHP
- Gained hands-on experience in manufacturing processes, from design through production
- Learned fundamentals of manual and CNC machining, producing custom parts for various industries

Certifications

- **SOLIDWORKS:** Certified Expert (CSWE), Professional (CSWP) with specialities in Simulation, Visualize, and Technical Support
- **DriveWorks:** Certified Professional, Solo, and Xpress Associate
- **Web Development:** W3Schools Certified in Node.js, PHP, TypeScript, JavaScript, HTML, CSS, and XML
- **Other:** Foundations of User Experience (UX) Design (Google/Coursera)

Education

- **Mechatronics Engineering** – UNC Asheville / North Carolina State University Joint Bachelor programme (2015 – 2017)
- **Mechanical Engineering** – Wake Technical Community College Associate programme (2012 – 2015)

Honors and Awards

- Eagle Scout (Boy Scouts of America) – September 2013

References

References available upon request.