

# ANDREW BILSBOROUGH

## SOFTWARE ENGINEER

🏠 Cedarburg, WI, United States 📞 +1 (262) 665-2710

✉ bilsborough.andrewj@gmail.com 🌐 andrew-bilsborough-9123a123a 📄 Lindelt

## Education

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LAKELAND UNIVERSITY

**B.S. Computer Science**, 2017—2022

Economics Minor, 3.48 GPA

## Employment History

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BADGER TECHNOLOGY GROUP

**Software Engineering Intern** May 2023 – August 2023

**Software Engineer** August 2023 – Present

Badger Technology Group, Inc. is a US-based Systems Engineering and Hardware/Software development company and was established with a focus on providing unique systems integration capabilities and solutions drawing on expert software, hardware and systems engineers from leading technology and aerospace companies and the US military (<https://badgertg.com/about>).

- Created AS9100-compliant software archival solution.
- Implemented customer requirements for prototype Primary Flight and 3-ATI Displays.
- Documented pre-existing internal processes.
- Designed and documented an internal development and testing asset (server rack).

## Volunteering

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REVITALIZE MILWAUKEE

**Technical Consultant** August 2020 – Present

Revitalize Milwaukee is a 501(c)3 nonprofit organization whose goal is to reduce social, economic, and environmental disparities by providing free home repairs throughout Milwaukee and Waukesha counties (<https://www.freehomerepairs.org/our-mission>).

- Partnered with management to optimize and maintain planning software.
- Applied database design principles to optimize software setup and operations.
- Created and maintained dashboards to enable management to assign and track tasks and project completion.
- Monitored data quality to eliminate duplicate data.
- Troubleshoot and resolved software and data issues.

## Technical Skills

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<b>Programming Languages</b>	C++, C#, Haskell, Java, PowerShell, Python, Rust, SQL
<b>Specializations</b>	Safety Critical C++03 (Using Modified AUTOSAR C++14 Guidelines)
<b>Frameworks &amp; Libraries</b>	OpenGL 2.0 SC, ZMQ
<b>Tools</b>	CMake, Git, GitHub, Inkscape, Power Automate, Visual Studio, Visual Studio Code

## Projects

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<b>Software Archival Solution</b>   SharePoint, Power Automate, PowerShell	2023
<i>Badger Technology Group</i>	

Created a SharePoint-based, AS9100-compliant software archival and distribution solution. Badger possessed a process document describing procedures required for compliant approval and archiving of software releases, but lacked a platform on which to perform said procedures. The company eventually

planned to transition to a full ERP system once operations stepped up, but a smaller solution was required in the interim.

Development of the solution required investigating the feasibility of various archival approaches (e.g. Power Automate flows, custom C# application, Azure Blob Storage), how and where the archival and approval processes might be automated in each approach, and the technical challenges and limitations inherent to each approach.

Final deliverables included the completed archival system, process & system documentation, and user guides. Additionally, existing process documentation was revised to reflect the technical limitations and design decisions of the implementation.

**Primary Flight Display Prototpye** | C++(Safety Critical), CMake, OpenGL SC 2.0, ZMQ, Visual Studio 2023

*Badger Technology Group*

A primary flight display prototype for the Calidus B-250 Simulator utilizing ZMQ to receive flight data and OpenGL to draw the display elements. Customer requirements were specified through the use of JIRA tickets, with the project organized around agile sprints.

**3-ATI Display Prototpye** | C++(Safety Critical), CMake, OpenGL SC 2.0, ZMQ, Visual Studio 2023

*Badger Technology Group*

A fork of the primary flight display prototype modified for use on a 400×400 3-ATI standby display.

**Server Rack Design & Documentation** 2023

*Badger Technology Group*

Designed and documented a server rack intended to be used for internal testing and development of flight simulator software and hardware. Documentation included bill of materials, internal connection diagrams, user & setup guides, and testing & verification procedures.

 **Lindelt/java-either** | Java 2022

*Personal Project*

An error-handling monadic type implemented in Java SE8, comparable to Haskell's **Either** or Rust's **Result**.

**Note Taking Mobile Application** | Java, Android Studio 2022

*Lakeland University*

Developed as part of a mobile applications development class. Focus was on creating a minimal viable product with a consistent visual style and clean code base.

**2013 First Robotics Competition** | C++, Eclipse 2012—2013

*Cedarburg High School*

Lead programmer for the CHS robotics team. Implemented the majority of the design requirements, tested the produced robot, and managed robot code performance during the competition.

## References

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DANIEL WADE

**President & Founder**

*Badger Technology Group*

✉ d.wade@badgertg.com

LYNNEA KATZ-PETTED

**Chief Executive Officer**

*Revitalize Milwaukee*

✉ lynnea@rtmilwaukee.org