Adam Maus

https://adammaus.com

INTRODUCTION

I am passionate about developing innovative software and technology to help others. I am open to opportunities that align with my skills in software development and research.

EDUCATION

University of Wisconsin - Madison
Masters in Computer Sciences (2011 - 2012)
Bachelor of Science in Computer Sciences (2005 - 2009)

WORK EXPERIENCE

Center for Health Enhancement Systems Studies (CHESS) at University of Wisconsin – Madison | https://chess.wisc.edu | 2007 – Present | Various roles with increasing responsibility

Lead Software Developer: Present - 2015

- Develop and support apps and websites for CHESS' randomized clinical trials with thousands of participants including older adults, patients in recovery for substance misuse, patients undergoing cancer treatment, substance use treatment organizations, and others. As of May 2024, CHESS currently has 8 active research projects with over 28,000 users.
- Mentor full-time and student software developers which includes coordinating project development and maintenance, reviewing code, triaging issues, and providing feedback to help improve technical and interpersonal skills.
- Research and offer technology recommendations to project study staff, researchers, and collaborators when planning, developing, and maintaining projects.
- Work with statisticians to prepare and disseminate data for publication from CHESS systems. Worked on a team to improve research data collection, management, and analysis processes at CHESS. Published a journal article in 2023 about our website and app's data collection process.
- Set up and actively maintain 13 Ubuntu Linux and Windows servers. One still runs CHESS code from 1999! This includes provisioning, vetting and applying patches, mitigating security vulnerabilities, scaling resources, and archiving legacy servers. At one time, I actively maintained 21 servers.
- Primary contact person when working with vendors and UW-Madison's DoIT to keep infrastructure and services such as servers, app store apps, code repositories, etc. running.

- Improved software development practices by formalizing and documenting our processes for developer onboarding, documentation, app deployment, quality assurance, automated testing, improving our security, collecting app data, and professional development.
- Maintain and enhance Gitlab pipelines using Docker and shell scripts for building, testing, and deploying CHESS projects to various servers behind and in front of UW firewalls.
- Developed and actively maintain a modular PHP framework to easily move functionality and user interfaces between CHESS projects that is used as the foundation for all of our current projects. Applied for and won funding for development of this framework from a large software company in the Madison area in 2017.
- Completely rewrote the cross-platform Javascript frontend code library we developed over several years to make app development faster, more efficient, less error prone, and easier to maintain.
- Work with researchers in UW-Madison Computer Sciences to develop and maintain the code and server infrastructure for Google Home and Alexa smart speaker skills designed to help older adult study participants improve their Chronic Pain and Functional Movement.
- Sole developer and maintainer of an app built with UW-Madison Psychology department researchers to collect surveys, SMS/Call, and location data when people misuse opioids with an aim to predict when people will relapse based on their location, who they are talking to, and the language they use.
- Independently developed an Android and iOS app built between January and May 2018 for tick monitoring and prevention for the Midwest Center of Excellence in Vector-Borne diseases. In 2019, I rewrote this app using the cross-platform Ionic framework in 4 months. Since then, I've trained multiple developers to help maintain the app. In 2023, I designed and developed an interface that integrates with a deep learning AI model to help researchers identify ticks in pictures submitted by users. In 2024, I led the effort to present our development of the tick identification system for the IT Professionals Conference at UW-Madison. As of August 2024, the Tick App has been used by nearly 28,000 people across North America.
- Nominated by CHESS in 2023 and 2024 for the UW Martha Casey Award for Dedication to Excellence. This award recognizes "unsung heroes" who perform their assigned jobs outstandingly and keep things running smoothly. These individuals are on the front lines of day-to-day work and lead from within the organization.
- Explored using Azure and ChatGPT to write boilerplate code using CHESS' modular PHP framework.
- Developed a JavaScript application for researchers to stay connected with study participants and monitor their opioid addiction recovery through data visualizations of app usage. I applied principles of User Experience Design and worked closely with study staff

to identify issues they had and found ways to make study administration easier. This application has played a role in all our current projects in varying capacities.

- Worked with Wisconsin Department of Health Services and researchers across UW-Madison to develop a social networking app to support people and fight misinformation during the COVID-19 pandemic.
- Wrote the first draft of a winning proposal for the Ohio Opioid Technology Challenge in the summer of 2018 for work related to A-CHESS, a smartphone-based system for people in recovery for opioid use disorder.
- Developed the idea for using a virtual counselor for people in recovery for opioid use disorder and led a team to win the first round of the Foxconn Smart Cities - Smart Futures competition in 2018 based on that idea.
- Mentored an undergraduate student as a part of the Undergraduate Research Scholars program in the development of a Javascript application for nurses and doctors to see patient health data using user-centered design principles.
- Worked with graduate students in Industrial & Systems Engineering at UW-Madison to collect and analyze data taken from OBD2 devices in the cars of older adults and then displayed that data to older adults in an accessible and easy-to-understand online "Trip Diary" to help mitigate risky driving behavior.
- Assisted in two HIPAA assessments by the UW Office of Cybersecurity and act as primary contact person when assessing security and disaster recovery in CHESS apps.
- Maintained CHESS' self-hosted Gitlab server for seven years and migrated projects to UW-Madison hosted Gitlab in 2023 which involved writing Python scripts to move issues and merge requests for over fifty projects using the Gitlab API.
- Standardized local development environments for CHESS developers using Vagrant and later switched to Docker containers with a LAMP stack and subnetwork.
- Led a study about how older adults perceive recommender systems and presented the work at the Intelligent User Interfaces conference in 2015.
- Assisted in focus groups with older adults in the design of ElderTree, a system to help reduce isolation and help older adults age in place.
- Maintain and improve legacy code from the 1990s that rely on ASP and VBScript.

Software Developer: 2015 – 2010

- Led development of CHESS websites and assisted with Android mobile app development.
- Developed interface for researchers to randomly send out any number of ecological momentary assessments to track alcoholism recovery on a CHESS mobile app.

- Worked with external collaborators to refactor the website for the nationwide Addiction Technology Transfer Center and rewrote VB.net code for reporting counselor's training certifications to a Moodle plugin (a PHP LMS framework).
- Refactored existing code from early 2000s to use modern software development coding standards such as object-oriented programming in VB.Net and C#.
- Assisted with Windows servers administration.

Intern: 2010 – 2007

- Assisted lead web designer with website content updates, HTML and CSS updates, optimizing media for websites, and building basic HTML forms.
- Assisted lead software developer with ASP.net code including the development of a basic keyword search engine.
- Sole developer and maintainer of a search engine for success stories, case studies, and projects in substance use treatment that is still in use as of August 2024.
- Wrote SQL Server queries and SQL stored procedures.
- Handled basic website technical issues as they arose.

SELECTED RESEARCH EXPERIENCE AND PUBLICATIONS

- Is that a Tick? Engineering a human-in-the-loop tick identification system. **A. Maus** and S. Nowak (2024 IT Professionals Conference, May 2024)
- Service-Action-Objects: A cross-platform method for logging interactions in digital systems. **A. Maus**. (Software Engineering Notes, April 2023)
- Polite or Direct? Conversation Design of a Smart Display for Older Adults Based on Politeness Theory. Y. Hu, Y. Qu, **A. Maus**, B. Mutlu. (Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems, April 2022)
- Using trip diaries to mitigate route risk and risky driving behavior among older drivers. R.P. Payyanadan, **A. Maus**, F.A. Sanchez, J.D. Lee, L. Miossi, A. Abera, J. Melvin, X. Wang (Accident Analysis & Prevention, September 2017)
- Using the NIATx Model to Implement User-Centered Design of Technology for Older Adults. D.H. Gustafson Jr., **A. Maus**, J. Judkins, S. Dinauer, A. Isham, R. Johnson, G. Landucci, A.K. Atwood (JMIR Human Factors, January 2016)
- Surveying Older Adults About a Recommender System for a Digital Library. **A. Maus** and A.K. Atwood (20th International Conference on Intelligent User Interfaces, March 2015)
- Evaluating Lyapunov exponent spectra with neural networks. **A. Maus** and J.C. Sprott (Chaos, Solitons & Fractals, June 2013)
- Neural network method for determining embedding dimension for time-delayed systems. **A. Maus** and J.C. Sprott (Communications in Nonlinear Science and Numerical Simulation, August 2011)
- Presentations by undergraduate researchers I mentored:

    - "Connecting Older Adults and Healthcare Providers Through a Social Networking Website" by Junho Oh presented at Undergraduate Symposium 2016, UW-Madison
    - "Assessing Alcohol Abuse Statistics Through Data Analysis of Social Networking Sites" by Jesse Gomer presented at Undergraduate Symposium 2012, UW-Madison
- Other publications available at:
    - https://researchgate.net/profile/Adam_Maus
    - https://orcid.org/0000-0002-5896-5230

SPECIALITIES

- **App and Website Development:** PHP, .NET framework, C#, VB.net, HTML, CSS, SCSS, Javascript, Typescript, AngularJS, jQuery, PHPUnit, Java, Android development, Objective-C, Swift, iOS development, Python, Apache Cordova, Ionic Frontend Framework
- **Server, Database, and Cloud Services Management:** MySQL, Linux, Windows Server, Apache HTTP server, SQL Server, AWS, Azure, VMWare Aria and vSphere for server management
- **Continuous Integration / Continuous Deployment:** Git, Docker, Gitlab, Shell scripts
- **Software Development Practices:** User Experience Design, Refactoring Code, Documentation, Unit and Integration Testing, Clean Code methodology, Project Coordination with Gitlab, OWASP secure coding guidelines

OTHER INTERESTS

Running and Biking (completed seven marathon races, one Half-Ironman triathlon, one 50k running race, and a 100-mile bike ride), Cooking, Reading science fiction, Writing (was a finalist at 2020 Austin Film Festival for a full-length holiday romantic screenplay named “Holiday on the Hills” written with my brother), Active member of the Friends of Military Ridge State Trail since 2020: Help with trail maintenance projects, maintain their website and developed a way for the group to sign up members and receive donations online