CV of Maximilian Gallup

Achievements & Notable Courses

2024

- Designing and building the hardware and software for autonomous vehicles to be used as a research platform by bachelor students under the name Autonomous Systems Engineering https://ase.vu.nl
- Daily Supervisor of Bachelor Students enrolled in the ASE Project

2023

- Bachelor Thesis Project - *Implementing BLADE[1] as a security pass in LLVM*
- Assisted in the deployment of a full stack web app by automating infrastructure setup using Ansible and setting up a CI/CD pipeline.
- Software Security (X_400127 [2]) Grade: 8.0 - Worked through a set of challenging assignments that involved finding vulnerabilities and crafting exploits to acheive code execution.
- Network Security (XM_0100 [2]) Grade: 8.8 - Implemented (Mitnick's) DNS Cache Poisoning Attack and the Kaminsky Attack
- Compiler Construction (XB_0003 [2]) Grade: 9.0 - Completed frontend for FenneC language and implemented basic optimization passes in LLVM
- Machine Learning (X_400154 [2]) Grade: 8.0 - Final project paper *CONVIDENNS: DDoS Detection Using Convolutional Neural Networks*
- Project Autonomous Driving (XB_0045 [2]) Grade: 8.5 - Building and programming an autonomous vehicle to compete in the NXP Cup 2023.
- 10th place at NXP Cup International Finals (Bucharest)
- 1st place at NXP Cup Dutch Qualifiers (Eindhoven)

2022

- Advanced Network Programming (XB_0048 [2]) Grade: 8.0 - Implemented part of a User-space Networking Stack (RFC 793)
- Secure Programming (XB_40005 [2]) Grade: 8.5 - Simple Chat and Server program with focus on security using openSSL for Secure Programming

2019

- Internship at Alphalink Engineering GmbH, Dr. Cracau, Dr. Köthe
- John Phillips Sousa Band Award
- Active Member of National Honor Society (NHS)

2018

- Trumpet Section Leader, High School Symphonic Band
- Member of Berlin Model United Nations Press Team (Video)
- Cambridge English Proficiency Certificate CPE (Grade C2)
- Chief Organizer of Annual Intercultural NHS Benefit Concert
- Head of Student Advocates Initiative

Education

- 2023-Present MSc Computer Security Vrije Universiteit Amsterdam
- 2020-2023 BSc Computer Science Vrije Universiteit Amsterdam
- 2019 John F. Kennedy School Berlin American High School Diploma

[1] Vassena, et al: https://gleissen.github.io/papers/BLADE.pdf

[2] Source code or paper can be made available upon request

Software and Hardware Experience

By working on the ASE project, I learned about Electronic Design Automation with KiCad by creating a simple power distribution board. I also learned to design 3D printed parts and flat metal plates for the autonomous rover using Onshape. Furthermore, I programmed the speed controller of the brushless motors to use *Field-Oriented-Control* to enable electronic braking.

From working on personal side projects I gained experience in automating the setup of Linux servers using Ansible and running various containerized services in a private network. Additionally, I like to explore the Rust programming language by building various hobby projects with it. The following is a list of tools and services I used in the past for personal projects or university courses.

- Services: Nginx, Nextcloud, Gitea, Containerized Personal Website, FileBrowser
- Networking: Nginx Proxy Manager, WireGuard, Tailscale, Wireshark
- Cloud: Docker, Ansible, Kubernetes, Helm, Google Cloud Platform

Languages

- Native: English, German, Czech
- Beginner: Dutch (A2)

Personal Interests

- Animal Rights Activism, Digital Privacy, Right to Repair Movement, Open Source
- Renewable Energies and Sustainability
- Rust, Operating Systems, Compilers, Neuromorphic Computing, Mojo (language), RISC-V
- Aviation and Robotics
- Jazz & Funk Music, Trumpet and Bass
- Volleyball

Contact

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- website: https://basingse.org

[1] *Vassena, et al: https://gleissen.github.io/papers/BLADE.pdf*

[2] *Source code or paper can be made available upon request*