



Gregory Van Aken

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Education

2015-2019 Haverford College, Haverford, PA
Major: Chemistry – *Departmental Honors*
Minor: Computer Science (concentration: Scientific Computing)
GPA: 3.87/4.0 – *magna cum laude*

Work Experience

2022-present Advanced Software Engineer, *Syncro Medical*, Langhorne, PA
2021-2022 Software Engineer, *Syncro Medical*, Langhorne, PA

- Product software engineer for ISO 13485/9001/27001 – compliant Agile development projects serving Syncro’s clients in the Medical Device, Pharmaceutical, and Biotechnology industries
- Technical Lead on a variety of projects featuring mobile, web, Linux, and embedded tech stacks
- Oversaw technical design / development efforts of other team members to ensure project success

2019-2021 Software Developer, *MOBILion Systems Inc.*, Chadds Ford, PA

- Core contributor on an Agile team of 4-5 developers creating software to drive a novel ion mobility / QTOF mass spectrometry instrument
- Led several external teams develop tools to interact with instrument data files
- Worked on web-enabled instrument control, REST API, microservice-oriented data acquisition, processing, and display
- Maintained several data processing / analysis tools developed alongside MOBILion chemists
- Consulted on software design and architecture for existing and future product development efforts

2018 Software Engineering Intern, *Bentley Systems*, Exton, PA

- Developed ASP.NET web APIs to interface with an extensive product record database
- Ported a company-wide build system to Python 2 / Python 3 compatibility

2017-18 TA & Grader, *Haverford College*, Haverford PA

- Graded lab work and led sessions to help students understand and accomplish Python-based projects for two courses: *Intro to Programming: Chemical Dynamics* and *Introduction to Computer Science and Data Structures*

Research/Development Experience

2016-present Independent Projects

- Cross-platform, multi-language full-stack framework to facilitate inter-process communication for distributed system integration, device control, and IOT applications
- Simulating 3D van der Waals interactions in Python
- Location-oriented mobile application in Xamarin.Android (back-end in ASP.NET)

2018-19 Senior Thesis, Haverford College (advisor: Dr. Joshua Schrier)

- "Implementing an Actor-Based Computing System for High-Throughput Featurization of Protein Structures for Machine Learning"

2017-19 Independent Study, Haverford College

- "Implementing force-directed graphing algorithms; characterizing 2D amorphous silica"
- "Discovering synergistic material combinations through quantum-based cheminformatics"
- "Implementing a pure-functional LLVM compiler in Scheme"

Skills and Techniques

Programming Languages: Python, C/C++, C#/.NET, JavaScript, HTML, Java, Kotlin, Bash

Development Technology:

- Cloud: AWS (IOT, S3, ECR, CloudFormation), Azure, Kafka, MQTT,
- Embedded: STM32, NXP, Arduino, UART, SPI, I2C, Ethernet, SafeRTOS/FreeRTOS/bare-metal, multi-core processors
- Desktop: QT (cross-platform), WPF
- Web: Django (REST Framework), ASP.NET, React, Electron, PostgreSQL, SQL Server
- Mobile: Xamarin.Android, Android Native (Kotlin)
- Development Infrastructure: CMake, Docker

IDE/Tools: Visual Studio, PyCharm, VS Code, Eclipse, Jupyter Notebook, Matlab, Origin, Excel, git, GitHub, Jira (Atlassian), CircleCI

Awards and Recognition

2020	<i>Winner</i> , 2020 NASA Entrepreneurs Challenge (\$100,000 cash prize for MOBILion Systems, Inc.)
2019	<i>Finalist</i> , Ambler Award, Haverford College
2017	<i>Finalist</i> , Beckman Scholarship, Haverford College
2015-19	<i>Academic Honor Roll</i> , Centennial Conference

Posters and Publications

2020	Arndt JR, Wormwood Moser KL, Van Aken G, et al. High-resolution ion-mobility-enabled peptide mapping for high-throughput critical quality attribute monitoring. <i>Journal of the American Society for Mass Spectrometry</i> . 2021;32(8):2019-2032. doi:10.1021/jasms.0c00434
2020	Wormwood Moser KL, Van Aken G, DeBord D, et al. High-defined quantitative snapshots of the ganglioside lipidome using High Resolution Ion Mobility Slim Assisted Shotgun lipidomics. <i>Analytica Chimica Acta</i> . 2021;1146:77-87. doi:10.1016/j.aca.2020.12.022
2020	Estrada Pabón JD, Haddox HK, Van Aken G, et al. The Role of Configurational Entropy in Miniprotein Stability. <i>J Phys Chem B</i> . 2021;125(12):3057-3065. doi:10.1021/acs.jpcb.0c09888
2019	“Structures for Lossless Ion Manipulations (SLIM)-Mass Spectrometry (MS) for High Resolution and High Throughput Permethylated N- and O- Glycan Analysis” – MOBILion Systems
2019	“Designing an Actor-Based Parallel Computing System for High-Throughput Featurization of Proteins to Predict Stability” – Haverford College

Volunteer and Leadership Experience

2018-19	<u>Captain</u> , <i>Haverford College Men’s Varsity Track and Field (Pole Vault)</i>
2017-19	<u>Musical Leader / Business Manager</u> , <i>Haverford College ‘Ford S-Chords</i>
2016-17	<u>Residence Advisor</u> , <i>Haverford College</i>