

# Aiman Darwiche

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## EDUCATION

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<b>Nova Southeastern University</b> <i>Ph.D., Computer Science</i>	Fort Lauderdale, FL August 2018
<ul style="list-style-type: none"><li>• Research Interests: Artificial Intelligence, Machine Learning, and Analytics</li><li>• Dissertation: “Machine Learning Methods for Septic Shock Prediction”</li></ul>	
<b>Regis University</b> <i>MS, Software Engineering</i>	Denver, CO March 2012
<b>American University of Beirut</b> <i>BS, Computer Science Minor</i>	Beirut, Lebanon February 1993

## TEACHING EXPERIENCE

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<b>University of Cincinnati</b> <b>Adjunct Instructor</b>	Cincinnati, OH 2021 - Present
<ul style="list-style-type: none"><li>• Teaching graduate courses at Carl H. Lindner College of Business.<ul style="list-style-type: none"><li>▪ BANA 6043: Statistical Computing</li><li>▪ BANA 7025: Data Wrangling</li><li>▪ BANA 7042: Statistical Modeling</li><li>▪ BANA 4143: Data Management for Analytics</li></ul></li></ul>	
<b>Walden University</b> <i>Contributing Faculty</i>	Minneapolis, MN 2019 – Present
<ul style="list-style-type: none"><li>• Teaching graduate courses at the College of Management and Technology.<ul style="list-style-type: none"><li>▪ ITEC-6145/8145: Enterprise Database Design</li><li>▪ ITEC-6650: Software System Engineering and Requirement Management</li><li>▪ ITEC-6685: Data Visualization</li><li>▪ ITEC-8100: Doctoral Study Mentoring</li><li>▪ ITEC-8502: Seminar in IT Systems, Software, and Management</li><li>▪ ITEC-8504: Seminar in Cloud and Grid Computing</li><li>▪ ITEC-9000: Doctoral Study Completion</li></ul></li><li>• Serving as Doctorate Committee chair and Committee member.</li></ul>	
<b>Regis University</b> <i>Adjunct Faculty</i>	Denver, CO 2021 – Present
<ul style="list-style-type: none"><li>• Teaching online graduate Data Science courses.<ul style="list-style-type: none"><li>▪ MSDS 640: Ethics, Privacy, and Social Justice in Data Science</li><li>▪ MSDS 655: Business Intelligence</li><li>▪ MSDS 664: Statistical Inference and Predictive Analytics</li><li>▪ MSDS 688: Artificial Intelligence</li></ul></li></ul>	

**Purdue University Global**  
**Adjunct Faculty**

Indianapolis, IN  
2019 – Present

- Teaching live online undergraduate Info Science & Technology courses.
  - IT232: Software Design and Development Concepts
  - IN400: AI: Deep Learning and Machine Learning
- Developed AI, Machine Learning, and Deep Learning courses for a new degree.
  - IN400: AI: Deep Learning and Machine Learning
  - IN403: Deep Learning and Artificial Intelligence

**Northern Kentucky University**  
**Adjunct Instructor**

Highland Heights, KY  
2018 – Present

- Teaching undergraduate and graduate Computer Science courses.
  - INF-282: Introduction to Databases
  - CSC-416/CSC-516: iOS Mobile App Development
  - CSC-439/CSC-539: Software Testing and Maintenance
  - BIS 435: Database Management Systems
  - MBI635: Database Management Systems

**Grand Canyon University**  
**Adjunct Instructor**

Phoenix, AZ  
2019 – Present

- Teaching online undergraduate and graduate Computer Science courses.
  - CST-117: Enterprise Applications Programming I
  - CST-560: Research Methods in Computational Sciences
  - CST-570: Machine Learning for Computer Science
  - CST-580: Artificial Intelligence
  - CST-590: Computer Science Capstone Project
  - DSC-520: Regression Analysis
  - DSC-530: Predictive Modeling
  - DSC-540: Machine Learning for Data Science
  - DSC-550: Neural Networks and Deep Learning
  - DSC-590: Data Science Capstone Project

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**PROFESSIONAL EXPERIENCE**

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**Compu-House**

Cincinnati, OH  
February 2019 – Present

***Chief Data Scientist/Researcher***

- Studying ensemble classification to predict the occurrence of medical issues with Python and R utilizing Random Forest, Ada Boost, and XtraTrees Classifier.
- Directing and managing a team of Data Scientists and researchers to create prediction models using Python and R:
  - Worked on stock market prediction models using Neural Networks.
  - Used ARIMA models to do Stock Market Forecasting Time-Series Analysis.
  - Created Bayesian Networks Property and Casualty Fraud detection models.

***Data Analyst/Data Scientist @ CoStrategix***

- Analyzing clients' current core businesses workflows and implementing machine learning and predictive analytics solutions to enhance productivity and efficiency:
  - Cleaned data sources, built Snowflake data warehouse, and created Power BI dashboards showing historical, current, and predicted sales for a shooting range client.
  - Analyzed, combined data sources, built a Snowflake data warehouse, and created prediction data models for an advertisement company.

***Software Developer/Influencer @ Trustaff***

- Worked on nurse recruiting, cardiologist placement, and commission calculations .net core applications.
- Modernized, structured, and standardized the IT department, and introduced data science and analytics into the workflow.

***Lead Software Developer @ SigmaTEK Systems***

- Worked on CAD/CAM nesting and automation software solutions using Delphi.

***Team Lead @ Anthem Blue Cross and Blue Shield***

- Led the development of an enterprise claims application in ASP .NET and SQL Server.

**Compu-House**

Cincinnati, OH

***Data Science/Machine Learning Researcher***

January 2013 – January 2019

- Researched and improved the prediction accuracy of Septic Shock by 12% using Python and R (combined Cox Regression model with Random Forest).
- Improved the lead time to predict Septic Shock from 4 hours to 20 hours.

**Cincinnati Insurance Companies**

Cincinnati, OH

***Software Developer***

July 2012 – January 2019

- Developed, supported, and improved Commercial and Personnel Insurance Rating Applications using C#.
- Managed multiple requests to develop different lines of businesses in parallel.
- Eliminated redundant tasks, and automated manual processes.
- Collected information from business users and transformed them into accurate technical requirements.
- Wrote code using the requirements that accurately reflected the regulations and business needs and that conformed with the highest OOP standards.
- Updated technical documents and tutorials with the new changes.
- Performed code reviews for work done by other developers.

**Compu-House**

Cincinnati, OH

***IT Director/Software Developer***

March 2010 – June 2012

- Managed and worked on a windows-based call center application for Macys using C# .NET and web services.
- Directed a team of developers and engineers to design and program an inventory-tracking device for P&G Pet Care. The device grabs the items' information through RFID technology in addition to the weight through a connected scale and streams the data to a SQL Server database. The project involved writing a mini-OS and mini-C# compiler for the device utilizing the C language.
- Managed and participated in the development of a risk assessment ASP .NET Application with C# and SQL Server for Axa-Matrix.

- Studied complex business rules to modify and enhance ASP .NET web services for a municipal court electronic filing system.
- Managed and led an offshore team to build web applications, and business solutions using C #, ASP .NET, MS-SQL Server, PHP, and MySQL.
- Supported and enhanced a healthcare analytical product for Thomson Reuters built in C#, ASP .NET, MySQL, PHP, and Stata. Responsibilities included collecting requirements, developing part of the requirements, and delegating other parts to an offsite development team, and fixing analytical and programming defects.
- Developed Windows and Web based applications, and e-commerce sites for small businesses using C#, ASP .NET, MS-SQL Server, PHP, and MySQL.
- Created a web-based ASP .NET application to manage the payroll and commission payments for a multi-carrier insurance agency.

**Sogeti**

Cincinnati, OH

**Senior Consultant**

May 2008 – February 2010

**Assigned to P&G**

- Built various business intelligence, statistical, and web applications for different entities at P&G using C#, VB .NET, ASP .NET, MS-Access, and Oracle.
- Developed a Financial Scoring Tool in MS-Access and enhanced a web-based Desktop Support Tool for Great American Life Insurance.

**Compuware**

Cincinnati, OH

**Consultant**

August 2006 – April 2008

- Developed, supported, and enhanced various manufacturing applications for P&G Pet Care utilizing C#, MS-Access, and Oracle.
- Enhanced and modified VB, VB .NET, C#, and C++ applications for First Data.

**Compu-House**

Cincinnati, OH

**Manager/Senior Consultant**

June 2003 – July 2006

- Managed teams of developers and researchers located in the US and Germany, to develop an Analytical company-wide Web Application for P&G Baby Care utilizing VB .NET, ASP .NET, MS-SQL Server, and MS-Excel.
- Developed an Access Database with Excel Automation for the Client Service Management at Fidelity Investments to track the investment plan auditing.
- Managed and developed several applications using VB .NET, ASP .NET, and SQL Server for a credit-reporting agency, car dealership, other small businesses.

**Ascendum Solutions**

Cincinnati, OH

**Project Manager/Consultant**

January 2001 – May 2003

- Managed and developed multiple financial, project evaluation, and research tracking applications for Ethicon Endo-Surgery and other subsidiaries of Johnson & Johnson with VB .NET, Oracle, MS-Access, SQL Server, and PHP.

**Quantum Consulting Group**

Cincinnati, OH

**Project Manager/Consultant**

August 1994 – December 2001

- Built various healthcare applications for Anthem using VB, SQL Server, and Access
- Led a team to build an Abuse Database for a Law Enforcement Agency using VB and MS-SQL Server.

- Managed a team to build an e-commerce system using ASP, VB, and SQL Server.
- Developed a Defect Tracking Tool with VB & SQL for Cincinnati Insurance.
- Led a team to design and develop a project management application utilizing VB, SQL Server, and Crystal Reports for Elder-Beerman.
- **Assigned to Kaiser Aluminum**
- Implemented investment and human resources management applications for Kaiser Aluminum using VB and SQL Server.
- Managed a team to design and develop the Catholic Health Initiatives (CHI) information directory utilizing VB, SQL Server, and Crystal Reports.

## PUBLICATIONS

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### *Conference Papers*

(Peer-Reviewed)

El-Geneidy, A., Mukherjee, S., & **Darwiche, A.** (April 2021). Prediction of Sudden Cardiac Death using Ensemble Classifiers. Proceedings of the Future of Information and Communication Conference (FICC) 2021, Vancouver, Canada.

**Darwiche, A.**, El-Geneidy, A., & Mukherjee, S. (2021). Improving Septic Shock Prediction with AdaBoost and Cox Regression Model. 2021 IEEE International Conference on Consumer Electronics and Computer Engineering (ICCECE), Guangzhou, China, pp. 522-527, doi: 10.1109/ICCECE51280.2021.9342457.

**Darwiche, A.**, & Mukherjee, S. (2018). Machine Learning Methods for Septic Shock Prediction. In *2018 International Conference on Artificial Intelligence and Virtual Reality*. New York, NY: ACM. doi: <https://doi.org/10.1145/3293663.3293673>

## PRESENTATIONS AND INVITED SPEECHES

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**Paper Presentation (Virtual)**, “Improving Septic Shock Prediction with AdaBoost and Cox Regression Model”, presented at the IEEE 2021 International Conference on Consumer Electronics and Computer Engineering, Guangzhou, China, January 2021.

**Invited Speaker**, “Machine Learning Techniques to Predict the Characteristics of Zeolite”, delivered at the 8<sup>th</sup> International Conference on Smart Materials and Structures, Dublin, Ireland, August 2019.

**Paper Presentation**, “Machine Learning Methods for Septic Shock Prediction”, presented at the ACM 2018 International Conference on Artificial Intelligence and Virtual Reality, Nagoya, Japan, November 2018.

## LANGUAGES

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**Arabic:** Native Language

**English:** Advanced Listener, Advanced Speaker, Superior Reading and Writing  
**French:** Intermediate Listener, Novice Speaker, Novice Reading and Writing

## **SKILLS**

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### **Programming**

- R, Python, C#, ASP .NET: **Advanced**

### **Databases**

- MS SQL, PostgreSQL, MySQL, Oracle: **Advanced**

### **Data Science**

- Machine Learning, Predictive Analytics, Modeling, Research and Reporting: **Advanced**
- Data Visualization: **Intermediate**

### **Mind Skills**

- Problem Solving, Critical Thinking, Creative Thinking, Innovative Solutions: **Expert**
- Communication Skills: **Advanced**

## **REFERENCES**

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Upon Request