

# Dr. Jacob W. Archambault

AWS-CERTIFIED FULL-STACK DEVELOPER SPECIALIZING IN C# .NET

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## EDUCATION

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2017	<b>Ph.D.</b> , philosophy	FORDHAM UNIVERSITY, BRONX, NY
	Dissertation: The development of the medieval Parisian account of formal consequence. Director: Professor Gyula Klima. Passed without corrections.	
2021	<b>A.S.</b> , software development	JEFFERSON COMMUNITY AND TECHNICAL COLLEGE, LOUISVILLE, KY

## PROFESSIONAL CERTIFICATIONS

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Jan 2024-Jan 2027	AWS certified developer - associate
Dec 2023-Dec 2026	AWS certified solutions architect - associate
Jul 2023-Jan 2027	AWS certified cloud practitioner

## EMPLOYMENT

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### VENMINDER

Feb 2023-present	<b>Software Developer II</b>	PRODUCTION SUPPORT TEAM
	Refactored multiple LINQ-to-SQL queries to prevent timeouts for our largest customers and realize major performance improvements after companywide SQL Server-to-PostgreSQL migration. Replaced longer monthly retrospectives with shorter more frequent retrospectives aligned with our weekly release cycle, leading to more consistent follow-through and better cross-department collaboration.	
May 2022-Feb 2023		CONTROL ASSESSMENTS TEAM
	Created Typescript Aurelia components, C# immutable records, sealed request and command handlers, Xunit .NET unit tests, and DynamoDB tables via AWS CloudFormation for control assessments containerized microservice instantiating CQRS architecture running on AWS ECS Fargate, and added generic batch update ability to our Dynamo data access library using AWS SDK for .NET.	

### PETPARTNERS

Oct 2021-May 2022	<b>Associate Software Developer</b>	PRODUCTION SUPPORT TEAM
	Unified redundant API calls and removed Cartesian explosion from Entity Framework code for premium tracking feature causing slow coverage period loading, leading to a 26X performance improvement. Formulated solutions for critical bugs and data fixes in Angular and C# .NET for both customer-facing and internal websites. Wrote wiki documentation for the company's release process, git workflow, and numerous routine SQL data fixes, and created Azure DevOps bug template subsequently adopted across entire company.	
April-Oct 2021		BACKEND TEAM
	Created backend logic, C# web API endpoints, and normalized SQL tables via Entity Framework migrations for handling commission payments to subcontracted companies and internal call center agents for new flagship employer-based pet insurance product. Converted SQL stored procedures for retrieving claims, policy losses, and veterinarian information in monolithic application to Entity Framework backend called by web API microservices, and scripted automation of .NET web API publication for local development environments.	

## WAYSTAR

Jan-April 2021

## Software Developer Apprentice

JAVA BOTS TEAM

Fixed bugs in Chrome and Firefox web crawlers obtaining patient payment information from insurance provider websites, written as Java Maven projects using Selenium, working in a trunk-based development workflow with IntelliJ IDEA and Eclipse IDEs, deployed those fixes to development and production environments with Jenkins, and recorded progress on bugs in kanban system using Jira.

May 2020-April 2021

DEVOPS APPLICATIONS TEAM

Pioneered work converting .NET Framework projects to containerized .NET Core projects running on Docker; co-led company-wide training on using YAML for Azure DevOps pipeline configuration; built, deployed, and configured team projects with Azure DevOps, and set up logging of automated alerts from Aro load balancers to Microsoft Teams and Splunk.

Aug 2019-May 2020

ARCHITECTURE TEAM

Contributed to a company-wide full-stack ASP.NET MVC in-house external applicant testing website with Visual Studio and Git version control, including writing C# code, SQL and Entity Framework LINQ-to-SQL queries, and JavaScript/jQuery functions for DOM manipulation and sending/retrieving server information with AJAX for features allowing teams to add or remove team members and restrict admin access to tests and test templates to their owning teams, and improved HTML/CSS web accessibility and design responsiveness by adding semantic HTML, media queries, and Flexbox layouts.

## FORDHAM UNIVERSITY

June 2015- May 2017

## Distinguished research fellow

Bronx, NY. Published numerous articles, book contributions, and an edited volume with publishers including Cambridge University Press, Brill and Springer, secured grants and honors from institutions including the University of Salzburg and the University of St Andrews, and presented papers at prestigious institutions across three continents, primarily in the history and philosophy of logic. For a full list of publications and presentations, see my CV.

## SELECT PROGRAMMING PROJECTS

## C#

PERSONAL WEBSITE

A .NET 8 MVC website with links to my programming projects, published papers, resume and CV, deployed to Azure App Service in a Docker Linux container and runnable locally from a Kubernetes deployment YAML file. Features implemented include partial views and dynamic page content generation, bundling and minification, custom routing, http status code error handling, and Google Analytics.

AUTO LOT MVC STORE

A three-project .NET 5 MVC solution consisting of a website front-end, a data access layer, and a model layer. Makes use of .NET 5 records, razor view components, custom tag helpers, exception filters, custom routing, YAML pipeline configuration with GitHub actions, and LINQ queries over objects linked via entity framework core to a SQL Server relational database. Expanded from a *Pro C# 7* tutorial.

RECURSIVE FOLDER COPIER

A .NET 5 file I/O application recursively copying files to an output directory based on user prompts for filters by date, regex pattern, number of files to match per subdirectory, making use of a decorator pattern, dependency injection and multiple implementations of a common interface.

STUDENT INFO APP

Code Louisville certification received for completing coursework and this console project serializing student data gathered from user prompts to a JSON file. Implemented C# features include LINQ queries, reflection, delegates, exception handling, and JSON serialization.

BLAZOR CALCULATOR

A Blazor WebAssembly calculator application, unifying the code for various calculator operations via lambda expressions and model binding.

## Java

TRIP REIMBURSEMENT CALCULATOR

A Maven JavaFX application that calculates, then displays meal, travel, and lodging reimbursement amounts based on different maximum daily allotments from user inputs.

## SLOT MACHINE GAME

A Maven JavaFX slot machine game that displays per turn and total winnings on each spin, calculated from the player's bet and number of matches.

## EMPLOYEE REFACTOR

A Java tutorial showing through its git history how to convert a tightly coupled application using inheritance and mutable fields into one implementing best practices including strong encapsulation, composition over inheritance, object cohesion, loose coupling, immutability, and dependency injection, via an application printing out information for various types of employees. Includes an extensive README explaining the implemented design decisions.

## TypeScript, JavaScript, and web development

## TYPESCRIPT INCOME TAX CALCULATOR

A front-end application using pure functions in TypeScript to display tax liability from a user's gross income input on a Bootstrap-styled HTML page.

## KUBERNETES WORDBANK

An Aurelia wordbank application that runs on a YAML-specified Kubernetes deployment.

## AURELIA BLOG

An Aurelia TypeScript application implementing a multi-stage build with nginx built on a slimmed-down alpine Docker container image that calls the jsonplaceholder posts API .

## ANGULAR STUDENT INFO

An Angular and Node.JS app for updating student midterm and final exam info, retrieved from a MongoDB database via mongoose.

## Python/SQL

## CPI INDEX ANALYSIS

Code Louisville certification received for completing coursework and Jupyter Notebook project analyzing consumer price index data, demonstrating facility with SQL queries, commands and joins, Python database connections and the pandas and matplotlib libraries for data analysis and visualization.

2020-present

## OWL

## FAMILY TREE ONTOLOGY

A growing *ontology*, that is, an organized categorization of reality into various types, detailing my family tree, starting from simple relationships and defining more complex ones in terms of the simpler ones. Written in OWL/RDFS and developed with Protégé ontology editor.

2020

## MUSIC ONTOLOGY

A music ontology focused on The Beach Boys' discography, detailing relations among songs, artists, albums, band members, and songwriters, among others.

2020-present

## COUNTRY ONTOLOGY

A highly modular ontology created via the use of imports and multiple files, based on the U.S. states and their common regional divisions according to the US Census.

## SKILLS

AWS	DYNAMODB, CLOUDFORMATION, FARGATE, ECS, CLOUDWATCH, S3, IAM, AWS CLI
DevOps	KUBERNETES, PODMAN, BASH, POWERSHELL, DOCKER, JENKINS, TEST-DRIVEN DEVELOPMENT
Microsoft Azure	AZURE DEVOPS PIPELINES, APP SERVICE, AZURE DEVOPS TEMPLATES, AZURE CLI
Ontology/knowledge engineering	OWL, RDF, PROTÉGÉ, SWRL, SPARQL
Python	PANDAS, MATPLOTLIB, JUPYTER NOTEBOOKS
.NET	ENTITY FRAMEWORK CORE, LINQ, XUNIT, ASP.NET CORE, BLAZOR
Databases	POSTGRESQL, SQL SERVER, MONGODB
Web development	TYPESCRIPT, ANGULAR, AURELIA, NODE.JS, BOOTSTRAP, JQUERY, WORDPRESS
JVM	INTELLIJ IDEA, JAVA, SELENIUM, JUNIT, GRADLE, MAVEN, JAVA FX, ECLIPSE