Kaitlyn F. Atif

Software Engineer | Protein Biochemist – Downstream Drug Development | Military Spouse
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Protein Biochemist with nine years of laboratory bench experience and over five years of experience in IgG therapeutics—specifically the downstream stages of the mAb (monoclonal antibody) drug development process. I have a strong foundation in experiment design, process development, data analysis, troubleshooting, and working in team-oriented and collaborative environments.

Currently, I am working toward a certificate in Full Stack Development from the Georgia Institute of Technology to add more technical expertise alongside my Bachelor of Science in Biochemistry. I have demonstrated skills in JavaScript, HTML, CSS, responsive web design, MERN Stack, and more.

SKILLS

Browser-based technologies: HTML, CSS, JavaScript, jQuery, Responsive Design, Bootstrap, Progressive Web Applications (PWAs), Local Storage, Session Storage, Indexed DB.
API Design: Client-Server Model API, REST, JSON, AJAX (Fetch API)
Databases: MySQL
Deployment and Delivery: Heroku, Git, GitHub Pages, Shell Scripting.
Server-Side Development: Node.js, Express.js, User Authentication, Template Engines, MERN Stack (Express.js, Node.js)
Applications: Microsoft Office, Visual Studio Code, Jupyter Notebooks, GitHub Pages, Google Applications, Graph Pad Prism
Other: AGILE software development principles

PROJECTS

Model-View-Control (MVC): Tech Blog | https://github.com/kaitlynatif/Tech_Blog

- *A CMS-style blog site similar to a Wordpress site, where developers can publish their blog posts and comment on other developers' posts as well. The app follows the MVC paradigm in its architectural structure, using Handlebars.js as the templating language, Sequelize as the ORM, and the express-session npm package for authentication.*
- *JavaScript, Node.js, Express.js, Bcrypt.js, Sequelize, Dotenv, Express, Express Handlebars, Express-Session, Handlebars.js, MySQL2, HTML5, CSS3, Bootstrap, Heroku, Git, Visual Studio Code*

Express.js Note Taker | https://github.com/kaitlynatif/Note_Taker

- *An application called Note Taker that can be used to write and save notes. This application uses an Express.js back end and saves and retrieves note data from a JSON file.*
- *JavaScript, Express.js, JSON, HTML5, CSS3, Heroku, Git, Visual Studio Code*

SVG Logo Generator | https://github.com/kaitlynatif/Logo_Generator

- *A node.js command-line application that takes in user input to generate a logo and save it as an SVG file.*

- *JavaScript, Node.js, Command Line Tool, OOP, Visual Studio Code*

README Generator | https://github.com/kaitlynatif/README_Generator
- *A command-line application that dynamically generates a professional README.md file from a user's input using the Inquirer package.*
- *JavaScript, Node.js, Inquirer, Command Line Tool, Visual Studio Code*

Weather Forecast Dashboard | https://github.com/kaitlynatif/Weather_Forecast_Dashboard
- *A weather dashboard that runs in the browser and features dynamically updated HTML and CSS. The application features a search option for a specific city along with a list of cities from the search history. The weather dashboard also features a five day weather forecast and current weather conditions for a given city.*
- *HTML5, CSS3, JavaScript, Server-Side API, Git, GitHub Pages, Visual Studio Code*

EXPERIENCE

Review Center Tutor November 2022 – Present
Paper | Remote
· Provide asynchronous, constructive feedback and suggestions on student essays and assignments.
· Conduct pedagogical assessments and provide feedback to students.
· Create an engaging learning environment and enhance student confidence and interest in learning.
· Contribute to the tutor team by offering knowledge and support to peers.

Independent Contractor October 2020 – December 2021
Instacart | San Jose, California; Reno, Nevada
· Provided families with grocery delivery services while efforts were focused on coursework and training in Data Science.

Associate Researcher October 2019 – September 2020
Aragen Life Science | Morgan Hill, California
· As a part of the downstream biologics group, purified and characterized a variety of monoclonal antibodies and fusion proteins from harvest clarification to post purification polishing and CoA analytics.
· For difficult proteins that did not behave under the conditions of Aragen's standard purification platform, assisted in the development and optimization of effective downstream purification processes from harvest clarification to post purification modification/polishing.

Associate Researcher July 2019 – September 2019
Alector | Milpitas, California
· Supported the downstream team at the manufacturing headquarters with routine purifications and analytical characterizations of monoclonal antibodies for the research group in South San Francisco.
· Purified and polished antibodies by Protein A and SEC on AKTA Avant and AKTA Pure systems.
· Routinely analyzed purified antibodies by SEC, SDS-PAGE, and monitored endotoxin.
· Documented protein purification results and analytics and made digital presentations of the results.

Associate Researcher December 2018 – March 2019

DiscernDX | Palo Alto, California

· Supported senior scientists of this startup in the design of a metabolomic study to examine the metabolite profiles of thousands of CRC (colorectal cancer) patients via LCMS on an Agilent QTOF machine.
· Responsible for determining what types of consumables and reagents would meet our study design needs and in quantifying the materials needed per patient sample for tens of thousands of samples.
· Responsible for making the reagents, such as the liquid chromatography solvents and the solvents utilized for the extraction of metabolites from human plasma.
· Performed metabolite separated extraction of human plasma samples on the bench for hundreds of LCMS test runs.
· Supported the senior scientists in the optimization of the bench workflow to transform it from a manual sample processing scheme to a more automated one utilizing a Tecan.

Associate Researcher October 2018 – December 2018

The Parkinson's Institute | Sunnyvale, California

· Assisted in the genotyping of mouse colonies via PCR and DNA gels to confirm breeding results for in-vivo studies.
· Administered experimental pharmaceuticals to mice colonies and maintained electronic records of dosing logs of in-vivo studies.
· Harvested tissues and organs of both experimental and control mice for biochemical and histological analysis.
· Worked with senior scientists to extract proteins from mouse tissues; performed western blots to confirm expression of alpha-synuclein - a protein of interest in the epidemiology of Parkinson's disease.

Associate Researcher II June 2016 – August 2018

Allakos | San Carlos, California

· Executed all the stages of protein production (protein harvest, purification, formulation, and characterization) for research and CMC. Conducted quality control of the in-house produced biologics by SEC-HPLC, SDS-PAGE, light scattering, ELISA, and kinetic analysis by ForteBio Octet.
· Conducted drug formulation and GMP-supportive stability studies of two antibody drug products, various antibody drug candidates and their respective targets. Characterized antibodies by HPLC-SEC, SDS-PAGE, ELISA, ForteBio Octet, sub-visible particle analysis, light scattering, and UV-Vis spectroscopy. Regularly monitored aggregates, endotoxins, osmolality, and viscosity.
· Assisted in the development of subcutaneous formulations at >150 mg/mL IgG for two antibody drug products in phase II clinical trials.
· Collaborated on a year-long project to resolve the issue of self-aggregation in a monoclonal antibody (mAb) at >100mg/mL IgG. Collected and analyzed analytical characterization data of the monoclonal antibody of interest to create a model to predict which buffer formulation matrices would cause the mAb to self-aggregate. Performed this work via Excel and Jmp Statistical software to create a three-dimensional function representing the ideal buffer conditions (those which prevented it from self-aggregating) and the non-ideal buffer conditions (those which caused the mAb to self-aggregate.) Managed large datasets of analytical characterization endpoints collected daily over extended periods of time to create a time series to make the model more accurate. Assisted in the design of subcutaneous formulations to resolve protein self-aggregation and to improve the physical and chemical stability.

· Utilized the data from the self-aggregating mAb project to optimize and execute new methods via differential scattering fluorimetry (DSF) to examine the TM (melting temperature) of proteins in order to characterize the stability efficacy of potential subcutaneous drug formulations in a high-throughput manner.
· Interacted with teams in process and analytical development and other functional areas. Reviewed and drafted technical documents such as process descriptions and QC documents.

Laboratory Technician August 2015 – November 2015
Hydrosphere Research | Alachua, Florida
· Conducted bioassays and toxicity characterizations of domestic wastewater and industrial effluents.
· Initiated and monitored laboratory experiments, performed daily physical measurements-dissolved oxygen, pH, conductivity, salinity, temperature-using laboratory instrumentation.
· Assisted with the maintenance of the on-site aquaculture of various organisms (including feedings, water changes, enclosure cleanings.)
· Maintained accurate records of experiments and prepared toxicological reports for clientele.

Research Fellow & Teaching Assistant August 2013 – May 2015
University of Florida | Gainesville, Florida
· As a research fellow, collaborated with an interdisciplinary team to investigate an alternate method of measuring bromide concentration in water to model and quantify the formation potential of bromine-disinfection byproducts during the drinking water treatment process.
· As a teaching assistant, organized weekly office hours to provide undergraduate and graduate students with the academic assistance to master the fundamental principles of aquatic chemistry relevant to water treatment processes.

Biochemistry Assistant Researcher June 2011 – June 2013
California State University East Bay | Hayward, California
· Utilized differential protein expression to compare proteomes of poplar plants grown under non-saline conditions with those exposed to salinity stress to elucidate the mechanism of salinity tolerance in various poplar clones.
· Analyzed new methodology to effectively extract and purify plant proteins for quantitative and qualitative analysis.
· Handled the troubleshooting of the protein extraction techniques employed.

EDUCATION

Bachelor of Science (B.S.) - Biochemistry January 2010 - June 2013
CALIFORNIA STATE UNIVERSITY, EAST BAY | Hayward, California
Relevant coursework: Calculus (Differential, Integral, Vector, Multivariate); Biostatistics; Linear Algebra; Computer Science (Intro to C++ Programming); General Chemistry; General Physics (Newtonian Mechanics, Waves & Optics, Thermodynamics, Electromagnetism); General Biology (Molecular, Plant, Animal); Quantitative Chemical Analysis; Organic Chemistry; Physical Chemistry (Thermodynamics, Quantum Mechanics, Statistical Mechanics); General Biochemistry (Biomolecules, Metabolism, Genetics); Genetics.

Full-Stack Software Development Certificate Expected: July 2023

Georgia Institute of Technology

Computer science applied to JavaScript: Algorithms (Searches, Sorts), Performance, Time Complexity, Big O Notation, Data Structures, Design Patterns.

Browser-based technologies: HTML, CSS, JavaScript, jQuery, Responsive Design, Bootstrap, Progressive Web Applications (PWAs), Local Storage, Session Storage, Indexed DB, React.js.

API Design: Client-Server Model API, REST, JSON, AJAX (Fetch API), HTTP request methods, GraphQL.

Databases: MySQL, MongoDB.

Deployment and Delivery: Heroku, Git, GitHub Pages, Shell Scripting, Unit Testing, Linting, Continuous Integration.

Server-Side Development: Node.js, Express.js, User Authentication, Template Engines, MERN Stack (MongoDB, Express.js, React.js, Node.js)

Python, Java, Amazon Web Servers (AWS), C#

IBM Data Science Professional Certificate December 2022

IBM

Coursework: What is Data Science; Tools for Data Science; Data Science Methodology; Python for Data Science, AI & Development; Python Project for Data Science; Databases & SQL for Data Science with Python; Data Analysis with Python; Data Visualization with Python; Machine Learning with Python; Applied Data Science Capstone.