You are an expert Resume writer: Read the Job Description, Review my personal bio and resume and then develop the body of a cover letter tailored to the job description using my experience. Do not include a from address. Include a greeting such as Dear {{company}} Hiring Manager.

Do not start your response with “Here is a draft cover letter for the …position”.

Write in a professional, confident tone but friendly voice. I should sound like a leader you would want to work with. Avoid using jargon, overly complex vocabulary, or a passive voice.

While maintaining professionalism, add a personal touch by showing genuine interest and enthusiasm for the role and the company. Make them feel I’m not just looking for any job but are particularly interested in this opportunity.

Start with a strong opening (hook) that immediately captures their attention. Explain my current work in creating a website using Vue.js and Firebase, and why my work shows evidence that I am who they need for the role. Use specific stats and examples from my work history to demonstrate how I’ve successfully tackled similar challenges or tasks in the past. Make sure you mention how I created a python script which uses the Claude API to automate the creation of my cover letters and resumes. Discuss my personal goals and how they align with the company’s mission and how i can contribute to their success. Avoid generic statements and focus on concrete examples that showcase my unique contributions and skill set.

Conclude by reiterating my excitement about the opportunity and the value I would bring to the team. State my eagerness to further discuss how you can contribute to the company in an interview. Thank them for considering my application.

Once you’ve drafted the cover letter, carefully review it to ensure it’s free from grammatical errors, typos, and that it flows well. Remove passive language. Make sure it’s tailored to the job and the company, clearly demonstrating why I am the ideal candidate for the position.

The goal of the cover letter is to complement my resume, not to reiterate its content.

**Resume**

Professional Experience

October 2022 to October 2024: Creganna Medical at TE Connectivity: Manufacturing Engineer

*World manufacturer of minimally invasive catheter device therapies and supplies over 50% of the world’s vascular catheters.*

* Production Department: Line Engineer where I led a project to lower scrap levels for a 24/7 catheter automation line; solution led to a surplus of 35k units being produced per year which equated to saving the company €125k per annum.
* New Product Development Department: R&D Engineer working on the development of novel tricuspid valve device, created by TRiCares located in Munich, Germany. Headed data analysis for the inspection measurements recorded in a clean room for a catheter delivery device carrying a tricuspid valve prosthesis; the development team was successfully able to draft a device development plan for the gate two phase using my statistical analysis reports.
* R&D Engineer in the Advanced Technology Department where I worked on a laser cut hypotube technology tool to offer customers a highly customizable hypotube for a range of intravascular therapies. Conducted & simulated data in-house. Lead a team of engineers to ideate solutions to approximate non-linearities in our dataset using supervised learning.

January 2019 to August 2019: Aerogen: Clinical Science Liaison (Intern)

*World leader in aerosol drug delivery in the acute care sector, reaching over 10m patients in 75+ countries.*

* Recruited onto the Clinical Science Team, reporting into the Team Leader with responsibility for supporting clients by communicating trial research and delivering consultations on hospital’s use of products.
* Reviewed and wrote literature reviews on scientific publications for ventilatory methods and the impacts that Aerogen’s products have over conventional devices.
* Produced, maintained, and ensured the quality of all documentation, including training materials and previous and ongoing international clinical trials.

Research Experience

**Master’s Thesis Research | Imperial College London**

*Machine Learning to Decode Phonemes in Degraded Speech from Neural Response Data in the Ascending Auditory System.*

* Developed ML models (KNN, Random Forest) achieving up to 72.5% accuracy in phoneme classification from neural spike-time data
* Processed and analyzed multimodal data across three brain regions (AN, IC, AI)
* Implemented data preprocessing pipelines for temporal binning and feature extraction
* Investigated optimal hyperparameter configurations for signal processing
* Analyzed effects of various parameters (channel size, envelope filters) on model performance
* Conducted systematic evaluation of temporal resolution impact on classification accuracy

**Undergraduate Research | University of Galway**

*Computational Neuroscience – Deep Brain Stimulation: an FEA analysis*

* Modeled physiological micro-motions using MATLAB to study the effects it has on neural tissue interfaces.
* Analysed and plotted the strain impacted on the visco-elastic neural tissue given different motion and electrode parameters.
* Hypothesised as to how the simulated results could map towards better understanding how these micro-motions lead to neural tissue scarring and how the prevention of this can lessen the decay of signal transmission post-implantation.

Education

**2020-2021 Master of Science (MSc) in Biomedical Engineering: Imperial College London**

*Thesis: Machine Learning to Decode Phonemes in Degraded Speech from Neural Response Data in the Ascending Auditory System.*

**2016-2020 Bachelor of Engineering (BEng) in Biomedical Engineering: University of Galway**

*Thesis: Physiological Motion Induced Loading Conditions at the Electro-Tissue Interface During Deep Brain stimulation: A computational investigation.*

Professional Certificates

* Vue.js Course: Udemy (January 2025)
* Generative AI with Large Language Models: Coursera (April 2024)
* Neural Networks and Deep Learning: Coursera (May 2022)
* Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization: Coursera (May 2022)
* Structuring Machine Learning Projects: Coursera (May 2022)

Hobbies and Personal Projects

* Running & Swimming: I ran the full marathon race in 03:42:38 this year in Milan, Italy.
* Language Learning: Continuing my language learning skill in German to reach B2 level.
* AI & Neuroscience: Keep up to date and read about AI and the field of cognitive neuroscience.
* Game Development: Created my own game development website using HTML & CSS. Enjoy creating games in Unity and Unreal Engine in C++ and C#.

Additional Experience

* B1 German Language Studies: Goethe Institut
* Developed interactive data visualization dashboards using Python.
* Created machine learning models for predictive maintenance.
* Experience with version control and collaborative development.
* Strong background in statistical analysis and hypothesis testing.

**Personal Bio**

Sean Benson is a versatile and analytical software developer with nearly a decade of engineering knowledge and experience both academically and professionally within the medical and technology industries. Sean previously worked as a medical science liaison at a medical company, researching clinical trials on the effectiveness of their products and communicating statistics and clinical metrics to nurses and doctors working in hospitals around the world. Sean has also worked as a manufacturing engineer for two years at a medical company which produces around 50% of the world’s vascular catheters. It was here where Sean took many lead roles in projects spanning from spearheading lean process improvement initiatives in highly automated factory lines, leading to savings of up to €125k per annum, developed supervised machine learning models to predict optimal parameters for a laser cut hypotube technology, and headed the data analysis team for validating the inspection measurements for a novel tricuspid valve prosthesis that was racing to finish gate two phase of the tricuspid valve’s development process. As of today, Sean has shifted his expertise to the realm of software development where he has created a modern website using technologies such as Vue.js and Firebase for a small business based in Germany.

Holding an MSc in biomedical engineering with focus on neurotechnology from Imperial College London and a BEng in biomedical engineering, Sean has continually enhanced his expertise in programming, data science, engineering principles and project management.

Sean's technical journey is distinguished by his ability to bridge disparate domains—applying machine learning techniques to medical manufacturing challenges, translating complex clinical data into actionable insights, and now leveraging full-stack development to create intuitive digital experiences. Recently, he has expanded his frontend development skills to include React and Next.js, focusing on component architecture optimization and efficient rendering techniques.

As a problem-solver at heart, Sean approaches challenges with both analytical rigor and creative thinking. During his time at Imperial College London, his research employed machine learning algorithms to decode phonemes in degraded speech from neural response data, achieving 72.5% classification accuracy. This experience strengthened his ability to work with complex datasets and extract meaningful patterns—skills he continues to apply in his software development work.

Beyond his technical expertise, Sean is an effective communicator who excels at translating complex concepts for diverse audiences. His experience presenting clinical findings to healthcare professionals has honed his ability to convey technical information clearly and persuasively, an asset in his current role where he collaborates closely with clients to understand their needs and implement tailored solutions.

Outside of his professional pursuits, Sean is an avid runner who completed the Milan Marathon in 03:42:38, demonstrating the same dedication and perseverance that he brings to his technical work. He is also passionate about languages, speaking English and Spanish natively while actively improving his German skills, currently at a B1 level.

As he continues to evolve his career in software development, Sean remains committed to creating thoughtful, efficient solutions that address real-world problems. His unique background spanning medical science, engineering, and technology gives him a multifaceted perspective that enhances his approach to building robust, user-centered applications.

**Job Description**