I am going to give you a resume, personal bio, job description and a google document with a table with 2x12 rows and columns. I want you to read the resume and job description and come up with 4 main skills (m.s) pertaining to the job which also have relevance to my resume and experience and for each of the 4 main skills, 5 examples of it (e.g. m.s = Data Science and an example is Machine Learning). List out the 4 main skills in a numbered list with its children skill examples.. Do not write ANY text other than what I have asked. An example of what it should look like is this:

1) Main Skill #1

(i) Main skill example #1

Resume

Sean Benson

Mobile: +353 877 057 195; Email: sean\_c\_benson@outlook.com; [www.linkedin.com/in/sean-benson-a3bb8815a/](http://www.linkedin.com/in/sean-benson-a3bb8815a/)

Address: Ireland

Nationalities: US and Irish Citizen

GitHub: [github.com/SCBenson](http://github.com/SCBenson)

Website:<https://scbenson.github.io/gamedev-portfolio/>| Current Project:<https://scbenson.github.io/business-languages>

Languages: English (native); Spanish (native); German (intermediate: B1) working towards B2.

Professional Summary

Frontend developer with experience building high-performance web applications using TypeScript and modern JavaScript frameworks, combining technical expertise with a passion for solving complex problems. Developed a Vue.js-based application with TypeScript integration, responsive design for mobile and desktop, and optimized performance through code-splitting and lazy loading techniques. Experience spans multiple frameworks including Vue.js and React, demonstrating adaptability across frontend technologies. Created personal portfolio projects and contributed to open-source initiatives, reflecting commitment to continuous learning beyond professional requirements. Technical skills include component-based architecture implementation, state management, and test-driven development practices. Collaborative team player with an ownership mindset who thrives in environments that encourage autonomy and direct problem-solving. Passionate about creating intuitive user interfaces that simplify complex processes, with particular interest in developing digital solutions that empower startups and entrepreneurs.

Key Skills & Competencies

| **Full Stack Development** | **Engineering** |
| --- | --- |
| * Cross-platform Development (Flutter, Dart) | * AutoCAD |
| * Vue.js, Node.js, Firebase, React, Next.js | * Validation & Verification |
| * UI/UX Design Principles | * Medical Device Development |
| * PostgreSQL & Data Management | * Capability Analysis |
| * User Authentication & Security | * Thermodynamics |
| **Software Development** | **AI & Machine Learning** |
| * Python Development | * Deep Learning |
| * Diffusers Library | * Diffusion Models |
| * PyTorch & TensorFlow | * Model Optimization & Deployment |
| * Code Review & Documentation | * Feature Engineering |
| * Agile Development | * ML Infrastructure Development |

Shape

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.

Technical Appendix

* **Software Development:** Python; C++; MATLAB.
* **Development Methodologies:** Vue.js; node.js; Firebase; Firestore; MongoDB; NoSQL; Object Oriented Programming; Dynamic Programming; Functional Programming; Machine Learning(Unsupervised, Supervised Learning and Deep-Q Learning); Containerization; Continuous Integration; Continuous Development; Optimization; Hyperparameter Tuning; Regularization; Fundamentals of Algorithms & Data Structures.
* **Data Analysis & Science Tools:** Visual Studio, Jupyter Notebooks; NumPy; Matplotlib; Scikit-Learn; Pandas; PyTorch; Statistical Analysis; Linear Regression; RNNs; CNNs; KNNs; Random Forest; Data Cleansing; Exploratory Analysis; Tableau & Data Visualization; Advanced Statistics.
* **Other:** Microsoft Teams; Git; GitHub; Minitab; Google Colab; Visual Studio; Jupyter Notebook; Spyder; Basics of SQL; MS Office; Google Suite; Excel.

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.