CareerCompass Bot Report

**Introduction to Intelligent System**

**Professor: Sara Zendehboodi**

**17th November 2024**

## Name of the Bot:

**CareerCompass**

## Description of the Bot:

The Career Guidance Bot is designed to assist users in exploring career paths and hobbies based on their interests, skills, and goals. It classifies user inputs into categories such as career advice, hobbies, and general inquiries, providing personalized guidance and recommendations. By leveraging OpenAI's language models, the bot generates tailored responses, helping users gain insights into potential career directions or hobby exploration. It tracks user context to ensure that each interaction is relevant and focused on the user's evolving needs and interests.

## Invitation Link:

<https://discord.com/oauth2/authorize?client_id=1307841321763082250&permissions=274877908992&integration_type=0&scope=bot>

## API Calls:

**API Call 1: OpenAI Completion API (for Classification)**

The OpenAI Completion API is used to classify user inputs into predefined categories like "Career Path," "Hobby or Sport Interest," "Concern or Follow-Up," "General Inquiry," or "Unclear." The prompt is carefully crafted to guide the model in recognizing the category of the input and providing a clear explanation for the classification. The settings used are a low temperature (0.2) to ensure the response is more deterministic, with a max tokens limit of 150 to keep the classification output concise. The output of this API call is parsed to extract the category and reasoning, which are then used to update the bot's context and generate a more personalized response.

**API Call 2: OpenAI Chat API (for Response Generation)**

The OpenAI Chat API is used to generate personalized and context-aware responses based on the classification of the user’s input. After classifying the input, the system message is constructed, incorporating both the user's recent context (career goals, hobbies, etc.) and the nature of their latest inquiry. This API is used with a moderate temperature (0.6) to allow for more creativity and variability in responses. The max tokens is set to 350 to ensure the responses are comprehensive but concise. The output from this API provides a tailored response that addresses the user's query in the context of their previous interactions, helping guide them on career paths, hobbies, or other inquiries.

## Prompt Engineering:

For the **Completion API**, prompt engineering is focused on categorizing the user’s input based on predefined labels like "Career Path," "Hobby or Sport Interest," and "General Inquiry." The prompt is structured with clear instructions, including specific categories and a request for an explanation for each classification. The goal is to minimize ambiguity and ensure that the API understands the user's message in context. The prompt is kept constrained to limit unnecessary variations and focus on providing a reasoned classification. The user input is explicitly presented within the prompt to direct the model’s attention to classifying it appropriately. The simplicity of the prompt and the defined categories ensure that the output is clear and usable.

The prompt engineering for the second API focuses on **context** and **personalization** to ensure the bot provides relevant and tailored responses. It considers the user's previous inputs and the classification of their current message to adjust the response accordingly. For example, if the user asks about career paths or hobbies, the response will reference their prior conversations, offering more specific advice. The prompt is designed with clear **instructions** and **conditions** to guide the bot in crafting helpful and relevant replies. By setting limits like **temperature** and **max tokens**, it ensures the responses are clear, concise, and well-structured, making the conversation feel natural and focused on the user's needs.

## Test Cases:

### Simple test cases:

1. **Prompt:** Hi, how are you? **(Pass)**

**Response:** Hello! As an AI, I don't have feelings, but I'm here and ready to assist you. How can I help you with your career or hobby-related questions today?

1. **Prompt:** What’s your favorite color? **(Pass)**

**Response:** As an artificial intelligence, I don't have personal experiences or preferences, so I don't have a favorite color. However, I'm here to help you with your career or hobby related queries. If you have any questions on those topics, feel free to ask!

1. **Prompt:** What skills do I need to become a data scientist? **(Pass)**

**Response:**

To become a data scientist, you need a mix of technical and soft skills. Here are some crucial ones:

1. Mathematical Skills: Strong knowledge in statistics, calculus, and algebra.
2. Programming: Proficiency in languages like Python, R, or SQL.
3. Machine Learning: Familiarity with algorithms, neural networks, etc.
4. Data Visualization: Ability to present complex results in a comprehensible way, tools like Tableau can be useful.
5. Big Data Processing: Experience with platforms like Hadoop or Spark.
6. Problem-Solving: Data scientists often tackle complex issues, so critical thinking is essential.
7. Communication: It's crucial to explain your findings to team members who may not have a technical background.

Remember, it's a field where continuous learning is vital due to rapidly evolving technologies.

1. **Prompt:** How can I get better at playing chess? **(Pass)**

**Response:**

Improving at chess involves both learning and practice. Here are some steps you can take:

1. Learn Basic Rules and Strategies: If you're new, familiarize yourself with the rules and basic strategies. Understand how each piece moves and its value.
2. Practice Regularly: The more you play, the more you'll understand the game. Try online platforms like Chess.com or Lichess where you can play against players of different skill levels.
3. Study Chess Openings: Knowledge of common openings can give you an early advantage. There are many books and online resources for this.
4. Analyze Your Games: Review and analyze your games to understand your mistakes. Online platforms often provide this feature.
5. Solve Chess Puzzles: This helps improve your tactical skills. You can find chess puzzles on various websites or in chess books.
6. Get a Chess Mentor or Coach: If possible, getting a mentor or coach can provide personalized guidance.
7. Join a Chess Club: This allows you to learn from others and practice in a social setting.
8. Read Chess Books and Watch Tutorials: There are many great books and online tutorials that can help improve your understanding and strategy.

Remember, chess is a game of patience and strategy. Improvement comes with time and consistent effort.

1. **Prompt:** Can you help me with a job that combines sports and tech? **(Pass)**

**Response:**

Absolutely, there are several career paths that combine sports and technology. Here are a few examples:

1. Sports Data Analyst: This job involves analyzing sports statistics and data, which can be used to improve team performance or enhance fan engagement.
2. Sports Engineer: This role typically involves designing and improving sports equipment using advanced technology.
3. Sports Technology Product Manager: This job involves managing the development of new technological products for sports, such as wearables, apps, or other digital platforms.
4. Virtual Reality/Augmented Reality Developer for Sports: This job involves creating VR/AR experiences related to sports, for training, entertainment, or fan engagement.
5. Sports Videographer: With the advancement in technology, capturing and editing sports events has become a specialized field.

Remember, any job in this field will likely require a good understanding of both sports and technology. You might want to consider gaining experience or furthering your education in these areas.

1. **Prompt:** What is a typical day like for a software engineer? **(Pass)**

**Response:**

A typical day for a software engineer often includes:

1. **Planning**: This often involves meeting with project managers, colleagues, or clients to discuss progress and plan the day's tasks.
2. **Coding**: A significant part of the day is spent writing and debugging code.
3. **Testing**: Software engineers regularly test their code to ensure it functions correctly. This can involve running unit tests, integration tests, or user acceptance tests.
4. **Documentation**: To ensure their work is understandable to others, software engineers spend time documenting their code and any changes they've made.
5. **Learning**: Technology changes rapidly, so software engineers often spend part of their day learning about new technologies, programming languages, or tools.

Remember, every role can vary depending on the company size, industry, and the engineer's experience level.

1. **Prompt:** I want to change careers from finance to marketing. Any suggestions? **(Pass)**

**Response:**

Sure, here are some steps you can take:

1. **Understand the Basics**: Start by learning about marketing principles and strategies. Online courses or books can be helpful.
2. **Network**: Connect with people in the marketing field. Attend industry events, join online forums and groups. This will help you gain insights and make valuable connections.
3. **Leverage Your Current Skills**: Finance has given you a solid understanding of business operations and data analysis, both of which are useful in marketing. Highlight these transferable skills in your applications.
4. **Gain Practical Experience**: Try to get some hands-on marketing experience. This could be through volunteering, internships, or even starting your own small-scale projects.
5. **Update Your Resume**: Tailor your resume to highlight relevant skills and experiences in marketing. Use marketing keywords to make your application stand out.
6. **Consider Further Education**: A certification or degree in marketing could be beneficial, but is not always necessary. Practical experience often holds more weight.

Remember, changing careers is a journey. It may take time, so remain patient and persistent. Good luck!

1. **Prompt:** What careers can I pursue if I’m good at writing and public speaking? **(Pass)**

**Response:**

Your skills in writing and public speaking can open up various career paths for you. Here are a few suggestions:

1. Journalism: Your writing skills can be put to great use in print, digital, or broadcast journalism.
2. Public Relations: PR specialists need to write well and communicate effectively, especially when dealing with media.
3. Law: Lawyers need excellent writing and public speaking skills to argue cases and persuade a jury.
4. Teaching or Academia: If you enjoy sharing knowledge, consider becoming a teacher or professor.
5. Speechwriting: Many politicians and executives hire skilled writers to craft their public speeches.
6. Content creation or Copywriting: Many companies need talented writers to create engaging content for their websites, blogs, and social media.
7. Public speaking coach: If you have a knack for public speaking, you could coach others to improve their skills.

Remember, these are just a few options. Your skills can be applied in many fields, so consider what interests you most.

1. **Prompt:** What kind of job can I get with a degree in environmental science? **(Pass)**

**Response:**

With a degree in environmental science, you have a broad range of career options. Here are a few:

1. Environmental Scientist: You could work on collecting and analyzing data to create environmental reports.
2. Conservation Scientist: You'd be responsible for managing the overall land quality of forests, parks, and other natural resources.
3. Environmental Consultant: You would advise clients on environmental regulations and how to minimize their impact on the environment.
4. Environmental Educator: You could teach others about the importance of environmental conservation.
5. Sustainability Specialist: This role involves developing and implementing practices to reduce a company's environmental footprint.
6. Environmental Lawyer: If you're interested in law, you could use your degree to specialize in environmental cases.

Remember, these are just examples. Your career path can vary greatly depending on your specific interests within environmental science.

1. **Prompt:** Should I pursue a career in music or tech? **(Pass)**

**Response:**

Choosing between a career in music or tech depends on your personal interests, skills, and long-term goals. If you're passionate about music and enjoy creating, performing, or producing it, a career in music may be fulfilling. However, it may also be challenging, as the music industry can be highly competitive.

On the other hand, if you're interested in problem-solving, innovation, and technology, a career in tech could be a great choice. Tech jobs are in high demand, offer good salaries, and can provide opportunities for continuous learning and growth.

Consider interning or volunteering in both fields to get a hands-on understanding of what each career entails. You can also seek mentorship or speak to professionals in both fields to gain insights. Remember, your career choice should align with your personal interests and values.

1. **Prompt:** I love art but also want to work with computers. Can I do both? **(Pass)**

**Response:**

Absolutely, you can definitely combine your love for art and interest in computers. There are numerous careers that intersect these two fields. Here are a few suggestions:

1. Graphic Design: This involves creating digital art for various mediums like websites, advertisements, logos, etc.
2. Animation or 3D Modeling: This involves creating animated characters or 3D models for movies, video games, etc.
3. UI/UX Design: This involves designing user interfaces and user experiences for software applications or websites.
4. Video Game Design: This involves creating the art and visual style for video games.
5. Web Design: This involves designing the visual layout and aesthetics of websites.
6. Digital Artistry: This involves creating art directly in software applications.

Consider taking some online courses or pursuing a degree in these fields to gain the necessary skills. Remember to build a portfolio of your work as it's crucial in these creative fields.

1. **Prompt:** I’m burnt out from my job. Should I look for a new career? **(Pass)**

**Response:**

Feeling burnt out can indicate a need for change. This could mean a new career, but it could also mean a different role within your current field or even just a break. Consider what aspects of your job are causing this feeling. If it's the nature of the work itself, a career change may be beneficial. If it's job-related stress or workload, perhaps a different company or role might suffice. Remember, it's important to find balance and enjoyment in what you do. If you're unsure what career might suit you, consider your interests, skills, and values. You may also want to consult a career counselor or coach for personalized advice.

1. **Prompt:** Can you recommend a career that involves a lot of travel? **(Pass)**

**Response:**

Certainly, if you're interested in a career that involves travel, here are a few options:

1. Flight Attendant: This is a great job that involves constant travel to different locations around the world.
2. Travel Agent: You may get opportunities to visit places to gain firsthand experience and knowledge to better advise your clients.
3. International Aid Worker: Organizations like the Peace Corps, Red Cross, and Doctors Without Borders often require travel to different countries.
4. Consultant: Many consultants travel to meet clients, attend meetings, and oversee projects.
5. Travel Writer or Blogger: These professionals travel to various locations to write about their experiences and offer travel advice.
6. Diplomat or Foreign Service Officer: They often live and work in a foreign country.
7. Archaeologist: They often travel to various excavation sites around the world.

Remember, each of these careers has its own set of requirements and qualifications, so it's important to research each one to see which best fits your skills and interests.

1. **Prompt:** What’s a good career to transition into if I’m tired of working in finance? **(Pass)**

**Response:**

Considering your background in finance, you have developed skills like analytical thinking, problem-solving, and understanding of market trends which can be useful in various fields. Here are a few options:

1. Consulting: Your financial expertise can be valuable in a consulting role where you help businesses optimize their operations.
2. Data Analysis: If you enjoy working with numbers, this could be a great fit. Data analysts interpret complex datasets to help companies make business decisions.
3. Entrepreneurship: Use your financial knowledge to start your own business.
4. Teaching/Education: If you enjoy helping others, consider teaching finance courses at a community college or online.
5. Non-profit sector: They need finance professionals to manage funds, grants, and budgets.

Remember, the best career path is one that aligns with your interests and goals. Consider what aspects of finance you enjoy and how they can translate into these or other fields.

1. **Prompt:** Can I be a professional pizza taster? **(Pass)**

**Response:**

Yes, you can become a professional pizza taster. It's a niche career path often associated with food critics, food bloggers, or chefs. You'd need excellent taste buds, a deep understanding of culinary arts, and great communication skills to describe the flavors, textures, and ingredients. Additionally, gaining experience in the food industry, food writing, or culinary training could be beneficial. You might also consider creating a blog or social media platform to share your pizza reviews and build a following. Remember, it's a competitive field, so passion and dedication are key.

### Dialog-specific:

1. **Prompt:** My name is Alex **(Pass)**

**Response:** Hello Alex! It's great to meet you. How can I assist you today in terms of career advice or hobby exploration?

**Prompt:** I'm looking for some career guidance.

**Response:** Of course, Alex! I'd be happy to help guide you. To start, could you please share with me a bit about your interests, skills, or any specific industries you're interested in? This will allow me to provide you with more personalized advice.

1. **Prompt:** I've always been interested in technology. **(Pass)**

**Response:** That's great! Technology offers a wide range of opportunities. You can consider learning to code, as it's a valuable skill in today's job market. Also, you can explore fields like cybersecurity, artificial intelligence, or data science. As a hobby, you might enjoy building computers or creating your own apps. Joining tech-related forums or groups, attending technology-focused seminars, or subscribing to tech magazines can help you stay updated in this field. Remember, the tech industry is vast and constantly evolving, so there's always something new to learn.

**Prompt:** but I don't like numbers.

**Response:** It's perfectly fine if you're not a fan of numbers. There are plenty of tech-related careers that don't heavily involve mathematics. For example, you could consider roles such as a UX/UI designer, a technical writer, or a project manager in the tech sector. These roles often require a good understanding of technology but don't necessarily involve a lot of number crunching. Would you like to explore any of these options further?

1. **Prompt:** I think I'm good at problem-solving. **(Pass)**

**Response:** That's great! Problem-solving is a highly valued skill across many industries. You might consider careers such as business analyst, engineer, software developer, or management consultant where this skill is heavily utilized. Further, you can enhance this skill through puzzles, brain games, or by taking on leadership roles in team projects.

**Prompt:** ahh, and I hate working in office or with screens and computers

**Response:** It seems like you might enjoy a career that involves problem-solving but is more hands-on and doesn't require you to be in an office or in front of a computer all day. Here are a few careers you might consider:

1. Carpenter or Builder: These professions involve a lot of problem-solving and physical work. You would be constructing and repairing building frameworks and structures—such as stairways and doorframes—made from wood and other materials.
2. Landscape Architect: You would design attractive and functional outdoor spaces for homes, businesses, and public areas. This career involves problem-solving and creativity, and much of your work would be done outside.
3. Electrician: This job involves installing, maintaining, and repairing electrical systems in homes, businesses, and factories. It's a hands-on job that requires problem-solving skills.
4. Mechanic: Whether it's cars, bikes, or larger machinery, being a mechanic involves problem-solving to diagnose and fix issues.

Remember, these are just suggestions and there are many other career paths out there. Consider what you enjoy doing, what you're good at, and what type of work environment you want when choosing a career.

1. **Prompt:** I grew up watching wildlife documentaries and shows, which sparked my fascination with nature and animals. **(Pass)**

**Response:**

That's wonderful! Your interest in wildlife and nature could be explored further in many ways. You could take up wildlife photography or bird watching as a hobby. Volunteering at a local animal shelter or a wildlife conservation organization can provide hands-on experience. If you're interested in a career related to this, consider studying biology, environmental science, or zoology. You may become a wildlife biologist, conservationist, or even a documentary filmmaker. You can also join online communities or forums related to wildlife and nature to learn more and connect with like-minded individuals.

**Prompt:** I am also geek on math, not calculus though. what profession should I choose?

**Response:** Considering your interest in math and nature, you might consider a career as a Biostatistician or an Ecological Modeler. These fields require strong math skills and allow you to apply them to understand animal behavior, population dynamics, and ecological patterns. You might also consider being a Wildlife Biologist with a focus on quantitative research, which would allow you to combine your interests in a meaningful way.

1. **Prompt:** I'm considering a career change. I currently work in retail. **(Pass)**

**Response:**

That's a brave decision! Changing careers can open a new world of opportunities. Since you have experience in retail, you've likely developed strong customer service, communication, and problem-solving skills. These can be applied to a variety of roles. If you want to stay close to your current field, consider roles like sales representative, account manager, or even retail management. However, if you're looking for something completely different, think about what interests you. Are you a tech enthusiast? Perhaps a role in tech sales or customer support could be a fit. Love writing? Maybe a content creation or copywriting role would suit you. Remember, it's never too late to learn new skills. Online courses, workshops, and certifications can help bridge any knowledge gaps. Ultimately, the right career path will align with your interests, skills, and long-term goals. Consider these factors and do some research to understand what a career change might entail.

**Prompt:** Maybe something in healthcare, but I'm not sure if my skills are transferable.

**Response:** Your skills in retail, such as customer service, communication, problem-solving, and teamwork, are definitely transferable to the healthcare sector. These soft skills are highly valued in healthcare, where patient interaction and team coordination are crucial. You might want to consider roles such as healthcare administration or patient advocacy. Furthermore, you could take relevant courses or certifications to gain more specific knowledge in the healthcare field. Remember, a career change is a step-by-step journey, and it's never too late to learn and grow.

**Prompt:** How should I processed?

**Response:** It seems like you're asking how to transition or process your career change from retail to healthcare. Here are some steps you might consider:

* 1. Identify Transferable Skills: Retail often involves customer service, problem-solving, and multitasking, all of which are valuable in healthcare.
  2. Gain Relevant Experience: You might consider volunteering in a healthcare setting or pursuing related certifications or courses.
  3. Network: Connect with professionals in the healthcare field for advice and potential job opportunities.
  4. Tailor Your Resume: Highlight your transferable skills and any relevant experiences in your resume and cover letter.

Remember, a career change is a significant step and it's okay to take your time to make an informed decision.

**Prompt:** What kind of position I can work?

**Response:** Based on your background in retail and interest in healthcare, there are several roles where your skills may be transferable. Positions such as Patient Services Representative, Healthcare Administrator, or Medical Sales Representative might be a good fit. These roles often require strong customer service and communication skills, which you likely developed in retail. Additionally, you could consider getting additional education or certifications in healthcare to broaden your opportunities. Remember, it's important to research each role thoroughly to understand the qualifications and responsibilities.

## Performance:

The CareerCompass Bot performs well in guiding users through diverse career and hobby options. It accurately analyzes user preferences, addresses gaps in basic knowledge, and provides clear and relevant recommendations tailored to individual interests. It has successfully handled scenarios involving a range of fields, from technical careers to artistic hobbies.

Additionally, I would increase specificity in responses, offering more personalized recommendations and targeted learning paths. Integrating real-time data sources would keep the bot's advice current with career trends, job opportunities, and educational resources. Expanding the bot’s knowledge base to cover niche fields and emerging industries would improve its guidance across diverse career options.