Join Ancora Health: Internship on Applications of Computer Science and Artificial Intelligence to Improve Human Behaviour

Are you passionate about how computer science and artificial intelligence can be used to transform the future of health care? Do you want to make a real impact on chronic lifestyle conditions and help improve the well-being of millions of people? Look no further! Ancora Health is seeking ambitious and talented interns like you to join our cutting-edge health company.

About Ancora Health
Ancora Health is a leader in digital lifestyle therapeutics, specializing in personalized, behavioral change programs for the prevention and management of chronic lifestyle conditions. Our vision is to add 5 million healthy years to communities and make lifestyle therapeutics an integral part of standard care by 2030.

Why Intern at Ancora Health?

1. **Meaningful Impact:** As an intern at Ancora Health, you will have the opportunity to work alongside experts in lifestyle medicine, psychologists, behavioral scientists, health coaches, dieticians, and product/software development. You will contribute to designing and evaluating impactful e-health tools that have a deep personal impact on individuals.
2. **Cutting-Edge Innovation:** Ancora Health stays at the forefront of the industry by partnering with leading academic institutions and continuously improving our behavioral pathways and coaching protocols. We integrate the latest advancements in artificial intelligence, behavioral science, and predictive analytics to deliver our programs through an innovative mobile application.
3. **Dynamic Start-up Environment:** Join our dynamic start-up environment where creativity and innovation thrive. You will work in a collaborative and supportive atmosphere, fostering your personal and professional growth. Your ideas and contributions will be valued, and you will have the opportunity to make a real difference.
4. **Holistic Approach:** Ancora Health believes in an integrative health approach that considers physical health, mental health, as well as the environment in which individuals live, work, and play. We guide individuals in building micro-habits and stimulate support from local communities and workplaces. By working closely with healthcare professionals and local municipalities, we help individuals access and benefit from a wide range of health initiatives.
5. **Cutting-Edge Technologies:** As an intern at Ancora Health, you will explore the potential of advanced technologies such as virtual behavioral coaching and chatbots, and be encouraged to think about how the latest developments in fields such as virtual reality could make a difference in habit formation. You will contribute to enhancing the coaching experience and revolutionizing the way we deliver personalized interventions.

In this briefing, you will find an overview of 4 types of projects to work on with us.

Project 1: next-generation nutritional tracking and feedback

Tracking food intake can help increase awareness and strengthen self-regulation. However, a significant drawback of food logging is that it can be time-consuming and susceptible to various biases, such as underreporting the quantity of consumed food. Next-generation nutritional tracking using AI can assist in making the process of food logging more efficient and effective.

As Ancora, we are interested in incorporating technology such as computer vision and voice recognition into our food logging workflow. Regarding computer vision: people could take a picture of their food and automatically learn the composition of the ingredients (see https://www.youtube.com/watch?v=SPq_fNlaMEY).

In terms of voice recognition, imagine if you could talk to your phone or Amazon Alexa and log the food you just ate.

Another relevant application of AI in terms of nutritional feedback is *augmented reality*. This could help provide users real-time feedback on their ingredient choice and/or portion size.

Project 2: natural language processing for sentiment analysis to predict likelihood to (re)lapse or achieve health goals

As Ancora, we would like to know if natural language processing (NLP) can be used to predict whether someone is likely to engage in healthy behaviour or experience a "lapse" (a moment of weakness or relapse) such as sedentary behaviour, excessive eating/drinking, or poor sleep. This could involve analyzing the language that clients use in written messages to coaches or the posts they make in group chats.

Sentiment analysis: Is it possible, for example, to use algorithms to identify positive, negative, or neutral sentiments based on word choice, sentence structures, and context? If someone uses positive language, it may indicate motivation, while negative language could suggest an impending lapse.

Emotion detection: To what extent can NLP help in detecting emotions in written text? By analyzing words and sentences, emotions such as happiness, sadness, fear, or frustration can be identified. If someone frequently expresses negative emotions, it may be an indication of vulnerability to a lapse.

Language patterns and style analysis: To what extent can NLP analyze language patterns and stylistic features in text? For instance, individuals at the beginning of a relapse period may repeat certain words or sentence structures, while motivated individuals often use positive and active language.

Project 3: chatbot systems to support and/or complement human coaching

Ancora is looking for ways to ethically implement chatbot technology to better assist people and their coaches.

Examples of ways in which chatbot technology can be used to help with healthy behaviour:

Providing support: How can a chatbot assist the coach in providing information? The chatbot can analyze the question of a customer, leverage a knowledge database, and suggest validated answers on the domains of nutrition, health, and fitness.

Tracking goals and stimulate progress: How can chatbot systems help users make their goals more specific and help them monitor their progress? For example, can a chatbot system analyze people's action plans and provide feedback on ways to improve them? Can the chatbot then proactively follow-up with users on their self-set action plans?

Offering personalized guidance: How can a chatbot provide personalized advice and suggestions based on the information customers provide? For instance, based on a customer's goals, the chatbot can suggest meal and snack options that fit their calorie or nutritional needs. It can also recommend personalized training programs based on a customer's fitness level and preferences.

Providing motivation and support: How can a chatbot assist in motivating customers and supporting them in acquiring healthy habits? When and how can it send positive messages, reminders, and encouragement to help customers stay motivated and committed to their efforts? Similarly, how can it best share tips and strategies for dealing with challenges and temptations?

Project 4: just-in-time adaptive interventions: prompting people when they need it most

Artificial intelligence (AI) offers immense potential for enhancing the effectiveness of Just-in-Time Adaptive Interventions (JITAIs). By leveraging AI algorithms and techniques, JITAIs can dynamically adapt to individual users' needs and provide personalized support in real-time.

For instance, AI can be employed to analyze users' historical physical activity data, sensor inputs, and contextual information to generate personalized activity recommendations. These recommendations can be tailored to an individual's preferences, goals, and current circumstances, ensuring that the intervention aligns with their unique requirements. AI algorithms can continuously learn and adapt from user feedback and behavior patterns, further refining the intervention's efficacy over time. This integration of AI into JITAIs enables a proactive and responsive approach, delivering timely and contextually relevant support to users, thereby increasing the likelihood of behavior change and sustained engagement.

For example, previous studies employed reinforcement learning (RL) to optimize the delivery of both activity and feedback prompts. Yom-Tov et al. developed an RL algorithm that took the demographics, past activity, expected activity, and message history into account. The effectiveness of a message was evaluated by calculating the amount of PA after the message

and this was used as a reward for the algorithm. They found that this algorithm was more effective than unvarying weekly reminders to promote PA behaviors. Additionally, Liao et al. developed an RL algorithm that used both the context of the user and a summary of past history to determine randomization probabilities for sending an activity prompt. They hypothesize that this algorithm will be effective in promoting PA behaviors after preliminary validation.

Click here to watch a short video showcasing how an internship at Ancora could look.

How to Apply
If you are excited about the prospect of working with Ancora Health and being part of a team dedicated to transforming healthcare, we encourage you to apply for an internship position. Please submit your CV, along with a cover letter highlighting your passion, skills, and how you believe your contribution can make a difference.

Join us at Ancora Health and help shape the future of lifestyle therapeutics!

Contact Information

For more information or to submit your application, please contact:

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