



*Do you want to put your talents at work to develop a new coaching concept? Do you want to work on an innovative project in an international environment? Are you excellent in what you do and do you have strong social skills?*

**Come and apply for one of three PhD positions available on Multi-Party Virtual Coaching!**

In the context of the European Horizon-2020 project Council of Coaches, the University of Twente and Roessingh Research and Development are looking for three highly motivated PhD candidates to help shape the future of virtual coaching technologies in the healthcare domain. Two positions are available at the University of Twente, and one at Roessingh Research and Development (details inside).

You will be working in a highly interdisciplinary and international research project – Council of Coaches. The project is an international collaboration between Universities and companies from the Netherlands, Belgium, Denmark, the United Kingdom, Spain and France. The project introduces a radically new virtual coaching concept based on multiple autonomous, embodied virtual coaches, which form together a personal council that coaches older adults towards a healthy lifestyle. Each coach has his own expertise, personality and style of coaching; they might not always agree with each other, but they all share a single goal: to support the user across every aspect of well-being, including physical, social, cognitive and mental support.

The project thus aims to develop a tool in which virtual embodied coaches form a team of experts that can discuss amongst themselves and with the user how the user could improve his healthy lifestyle behaviors. The project combines state of the art 3D Virtual Avatars with language and reasoning technology and applies this to the area of lifestyle and behavior change coaching.

#### **Positions:**

The three available PhD positions focus on three distinct, but aligned sub-tasks of the project:

- Position #1: Smart Behavior Mining (University of Twente)
- Position #2: Human-Computer Interfaces (University of Twente)
- Position #3: Coaching Strategies (Roessingh Research and Development)



## **Position #1: Smart Behavior Mining**

This PhD position will focus on the intelligent sensing, modelling and analysis of the user's physical, emotional, cognitive and social behavior to nurture the dialogs, arguments and interactions with the virtual coaches. Behaviors will be derived from the user interaction with wearable and mobile devices, e.g., activity detection, mobility tracking, speech processing or facial expression recognition. Behavioral data will be mined over time to discover relevant patterns and to automatically detect behavior changes demanding a prompt or preventive intervention from the lifestyle coach(es).



### **Your Profile**

You are highly motivated to work on human behaviour modelling from multimodal sensor data. You have a sound theoretical background in statistics, data mining and/or machine learning with a MSc degree in Machine Learning, Data Science or similar.

We welcome ambitious candidates with strong experience with statistical and data analysis software (MATLAB, R and/or Python). Experience with mobile/wearable sensing and automatic behaviour recognition is a plus. Good communication skills, a strong desire and capacity to work in teams, and fluency in English are also required. As a PhD researcher you are highly responsible, capable of planning and executing your work individually when required.



### **Our offer**

A challenging opportunity to perform PhD research in the context of a highly ambitious EU-funded project. We offer a 4-year full-time position as a PhD candidate appointed at the University of Twente (UT), with a qualifier after 1 year. In accordance with the Collective Labor Agreement for Dutch Universities (CAO NU) the gross monthly salary ranges from €2.222,- in the first year to €2.840,- in the fourth year. Additionally, the University of Twente provides excellent facilities for professional and personal development, a holiday allowance and an end-of-year bonus, and a number of additional benefits.



### **For more information**

Centre for Monitoring and Coaching: <https://www.utwente.nl/ctit/cmc/>

Biomedical Signals and Systems Group: <https://www.utwente.nl/en/eemcs/bss/>

University of Twente: [www.utwente.nl](http://www.utwente.nl)

Contact Oresti Banos: [o.banoslegan@utwente.nl](mailto:o.banoslegan@utwente.nl)



### **How to apply**

At the moment, the vacancy is not open yet. If you're interested, please keep checking the vacancy site of the University of Twente <http://www.utwente.nl/en/organization/careers/vacancies/phd>

**Applications will be accepted until Friday, July 21<sup>st</sup>, 2017.**

Write your motivation letter, clearly indicating which of the three positions you are applying for. Attach your CV and upload your application through the University of Twente website.



## Position #2: Human-Computer Interfaces

For this PhD position, we are looking for a technical inclined master of science who is keen to do research and write a thesis in the field of intelligent multi-modal conversational interfaces. Besides research into multi-party dialogue with the virtual coaches, the research will contribute to design, implementation and evaluation of the Council of Coaches system indeed works: does interaction with the virtual coaches help them communicate their health-related problems? What are the factors that contribute to the efficacy of the concept? Applicants are expected to contribute and take responsibility for research and development related to:

- Multi-modal User Interface Design for Mobile and Home applications: multimodal dialogues with multiple embodied conversational characters
- Implementation of the prototypes: requires approved programming skills
- Evaluation user experience and user satisfaction



### Your Profile

You are highly motivated to work on natural multimodal dialogue systems taking a user-centred design perspective. You have a MSc degree in Computer Science, Human Media Interaction, Artificial Intelligence, preferably with a specialisation in speech and natural language processing.

We welcome ambitious candidates with the expertise to develop working prototypes for mobile applications and virtual environments (Android / UNITY / Java / Python / Web services). Good communication skills, a strong desire and capacity to work in teams, and fluency in English are also required. As a PhD researcher you are highly responsible, capable of planning and executing your work individually when required.



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### For more information

Human Machine Interaction Group:	<a href="https://www.utwente.nl/en/eemcs/hmi/">https://www.utwente.nl/en/eemcs/hmi/</a>
University of Twente:	<a href="http://www.utwente.nl">www.utwente.nl</a>
Contact Dirk Heylen:	<a href="mailto:d.k.j.heylen@utwente.nl">d.k.j.heylen@utwente.nl</a>



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### **Position #3: Coaching Strategies and Knowledge Base**

This PhD position is focused on a number of research questions that are on the cross-section between the technical- and social sciences. As an ideal candidate, you are expected to build up strong theoretical knowledge about *motivation* and *coaching*, as well as in *personalization* in Human-Computer Interaction design. You are able to apply this knowledge in the development of state of the art Human-Computer Interaction tools; formalizing and implementing coaching strategies that the virtual agents in the project should adopt. Ultimately you will be responsible for the *content* of the virtual embodied agents: the *what*, *when* and *how* of the agent's interactions with the end-users. The position is highly interdisciplinary in nature and as such you are expected to collaborate and work together with our varied team of researchers and engineers. You have a strong technical background as well as a strong desire to build tools that can be used by- and offer real benefits to its users.



### **Your Profile**

You hold a MSc. in Computer Science, Human Computer Interaction, Artificial Intelligence or related field. You can demonstrate a strong technical background in software design and ideally artificial intelligence and/or language technologies. You are willing to familiarize yourself with theories of motivation and coaching and apply these in your work. Communication skills and the ability to work in a multi-disciplinary team are required. Programming skills are required; Java is a plus. As a PhD researcher you are highly responsible, capable of planning and executing your work individually when required.



### **Our offer**

A challenging opportunity to perform PhD research in the context of a highly ambitious EU-funded project. At Roessingh Research and Development (RRD) we offer a full-time contract for a duration of 3 years (36 hours per week) with a starting gross monthly salary of €2567,- in the first year. The contract is governed by the collective labor agreement 'Hospitals' with excellent conditions. Indicative starting date is September or October 2017.



### **For more information**

Roessingh Research and Development:

[www.rrd.nl](http://www.rrd.nl)

Contact Harm op den Akker:

[h.opdenakker@rrd.nl](mailto:h.opdenakker@rrd.nl)



### **How to apply**

At the moment, the vacancy is not open yet. If you're interested, please keep checking the vacancy site of Roessingh Research and Development: <http://www.rrd.nl/vacatures/>

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