

Personode – AI-Powered Candidate Intelligence & Recruitment Reasoning Engine

1. BASIC PROJECT INFORMATION

Official Project Title	Personode – AI-Powered Candidate Intelligence & Recruitment Reasoning Engine
Acronym / Short Name	Personode
Programme / Funding Source	Adopt Intelligence – internal R&D and product development (no external grant source specified)
Duration	March 2025 – ongoing
Coordinator	Adopt Intelligence, Skopje – Founder and Technical Lead: Assistant Professor Dr Miodrag Cekikj
Partner Institutions	Adopt Intelligence; the design was developed as a plug-and-play intelligence layer for integration with existing ATS, CV databases and HR/recruitment systems

2. PARTICIPATION OF UNIVERSITY SKOPJE ACADEMIC STAFF

Name and Surname: Assistant Professor Dr Miodrag Cekikj

Academic Title: Assistant Professor

Role / Function in the Project: Founder, Lead AI Architect and Principal Product/R&D Lead

Specific Contribution to the Project

Design and development of a reasoning engine that models candidates as a living knowledge graph rather than as a collection of keywords. The work includes ontological and graph-based modelling of skills, experience, seniority, recency and career relationships; semantic retrieval; graph traversal and combined ranking; hard filters and explainable recommendations; reasoning traces for verifying how the system arrived at a shortlist. Special focus is placed on equivalence and related-skill reasoning, so that the system can recognise relevant competence even when a CV does not contain the exact terminology from the job advertisement. The architecture is designed for on-premises, cloud and hybrid deployment while retaining data within the existing compliance perimeter.

3. CONTENT AND ACHIEVED RESULTS

Brief Project Description

Personode is an AI-powered candidate intelligence engine that adds a reasoning layer on top of existing ATS platforms, CV databases and recruitment workflows. Instead of relying primarily on keyword matching or isolated semantic similarity, the system builds a living knowledge graph of candidates, their skills, level of experience, duration, recency of use and career relationships. Graph-based reasoning is combined with semantic retrieval to produce ranked recommendations with a clear explanation of the reasons for each result. Personode is designed as a component, not as a replacement for an ATS: it can operate on-premises, in the cloud or in a hybrid environment and use local or hosted models, while candidate data remain within the organisation's governance and compliance perimeter.

Key Results / Outputs

Developed plug-and-play candidate intelligence engine; living candidate knowledge graph; graph + semantic retrieval and ranking; related-skill/equivalence reasoning; hard-filter mechanisms; explainable shortlist and agent trace; modelling of recency, seniority and career relationships; possibility for on-premises/cloud/hybrid deployment and integration with existing recruitment systems.

Publications / DOI / Other Relevant Scientific Results

Personode – the Candidate Intelligence Layer, software platform / R&D product.

<https://personode.adoptintelligence.com/>

4. SIGNIFICANCE FOR THE FACULTY

Benefits for Students, Teaching and/or Research

Personode is an applicable case study for teaching and research in knowledge representation, semantic search, graph reasoning, recommender/ranking systems, explainable AI and the responsible application of AI in HR. Students can analyse how different retrieval and ranking strategies affect results, how complex career relationships are modelled and how an explanation trail is provided for automated recommendations. The project also opens research topics related to fairness, bias, human-in-the-loop decision support, privacy-preserving deployment and evaluation of AI systems in sensitive domains.

5. LINKS AND MULTIMEDIA MATERIALS

Official Website / Project Link: <https://personode.adoptintelligence.com/>