LAB University of Applied Sciences

UI/UX DESIGN SUBMISSION

AI-enhanced candidate matching system

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1 Introduction:

The AI-enhanced candidate matching system is a full-stack web application created to assist recruiters in efficiently identifying relevant job candidates through semantic search and intelligent ranking. The platform integrates structured filtering mechanisms with vector similarity search and large language model–generated explanations to produce ranked, interpretable candidate results.

Traditional recruitment platforms often rely on keyword matching, which may overlook contextual relevance. This system instead emphasizes:

- Contextual semantic matching
- Transparent scoring logic
- Continuous refinement based on recruiter feedback

The UI/UX design ensures that sophisticated backend AI processes are translated into a clear and intuitive user experience.

2 Design approach and usability goals:

The user interface was designed according to core usability principles intended to balance clarity, efficiency, and trust.

2.1 Immediate comprehension:

The interface was structured so that, within a few seconds of viewing it, users can determine:

- The function of the system
- Where to input job requirements
- How to initiate a search
- How candidate relevance is represented

This supports quick orientation and reduces learning time.

2.2 Visibility of AI logic:

To promote trust in automated decision-making, the interface explicitly displays:

- A quantitative match score
- A mechanism to access explanatory reasoning
- Clearly structured candidate attributes

By making AI decisions visible, the system reduces ambiguity and enhances user confidence.

2.3 Minimizing cognitive demand:

Since recruiters often evaluate multiple profiles consecutively, the interface was designed to:

- Enable fast visual scanning
- Emphasize key decision indicators
- Avoid unnecessary visual distractions

The layout supports efficient decision-making without overwhelming the user.

2.4 Workflow alignment:

The design follows the natural stages of recruitment decision-making:

1. Define criteria
2. Execute search
3. Evaluate results

These stages are visually separated to maintain clarity and logical progression.

2.5 Adaptive user interaction:

The interface integrates feedback controls that allow recruiters to influence ranking behavior. By enabling structured feedback and optional explanations, the system reinforces a sense of adaptability and user control.

3 Technical architecture from a UX Lens:

Although technically complex, the system presents a simplified and user-friendly interaction model.

Frontend

Developed with React and Material UI.

Backend

Implemented using FastAPI.

AI Infrastructure

- Embedding generation via Jina AI
- Vector search through Qdrant
- Explanation generation using Google Gemini

From the user’s perspective, these components are abstracted into intuitive inputs and clearly structured outputs.

4 Information structure:

The interface is organized into three primary functional sections.

4.1 Search configuration section:

This section includes:

Left column:

- Salary range slider
- Industry selection
- Distance filter

Right column:

- Instructional message
- Large free-text job description field

The two-column structure allows structured filters and unstructured input to coexist efficiently.

4.2 Primary action section

A prominently positioned “Search Candidates” button acts as the main interaction trigger. Its centralized placement reinforces its importance and guides user focus.

4.3 Results presentation section

Candidate results are displayed as vertically stacked cards containing:

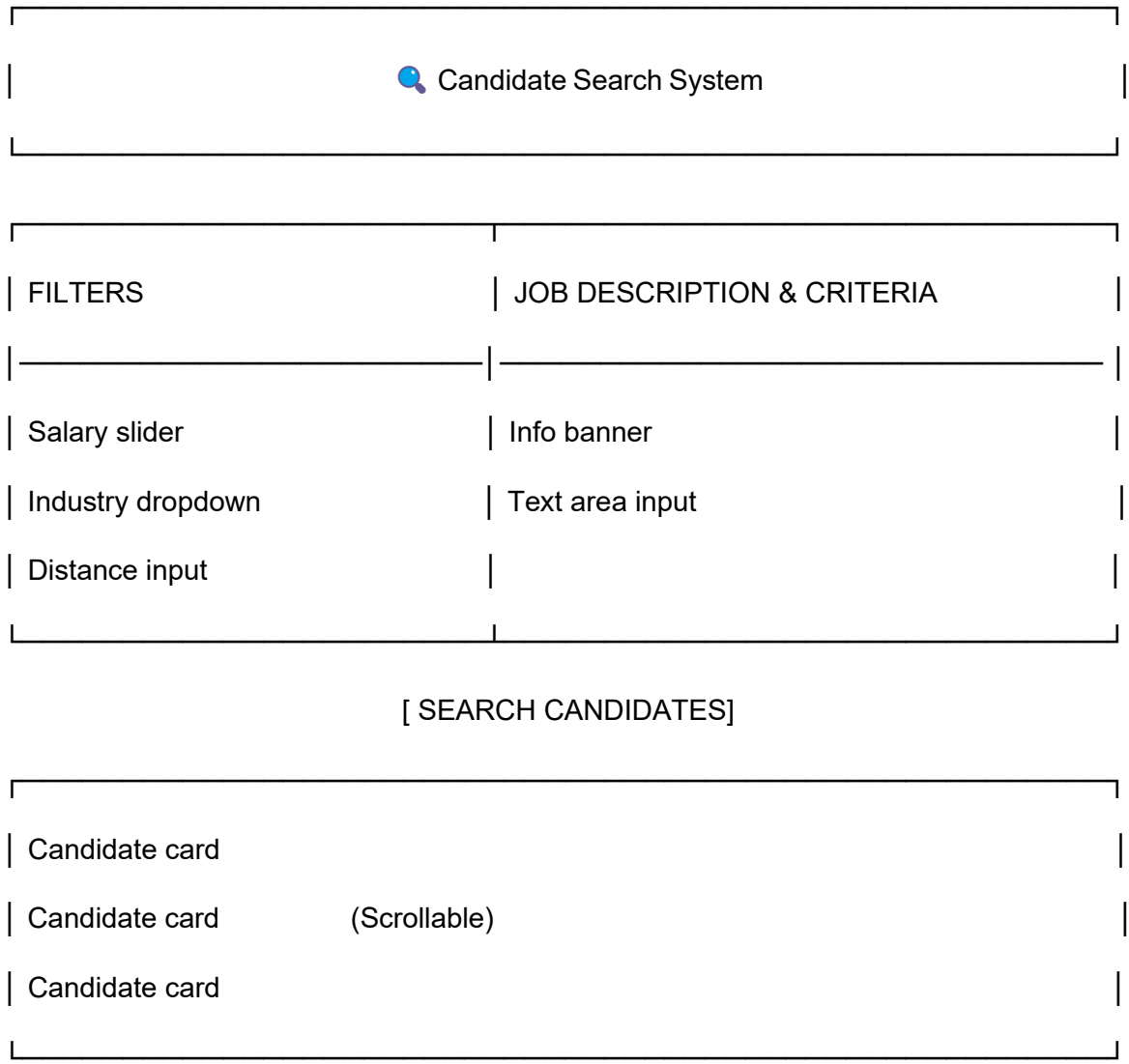
- Candidate name
- Role and geographic location
- Match percentage
- Link to AI explanation
- Skill tags
- Experience details
- Salary information
- Feedback buttons

- Optional comment input

This modular card format ensures clarity and consistency.

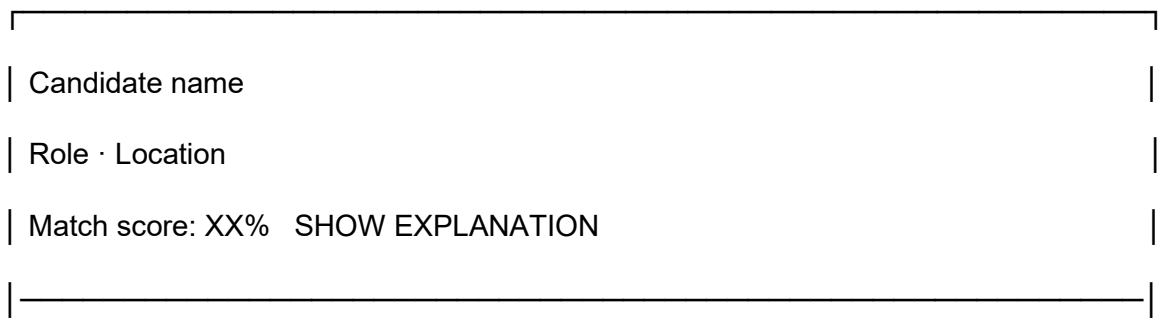
5 Structural representation:

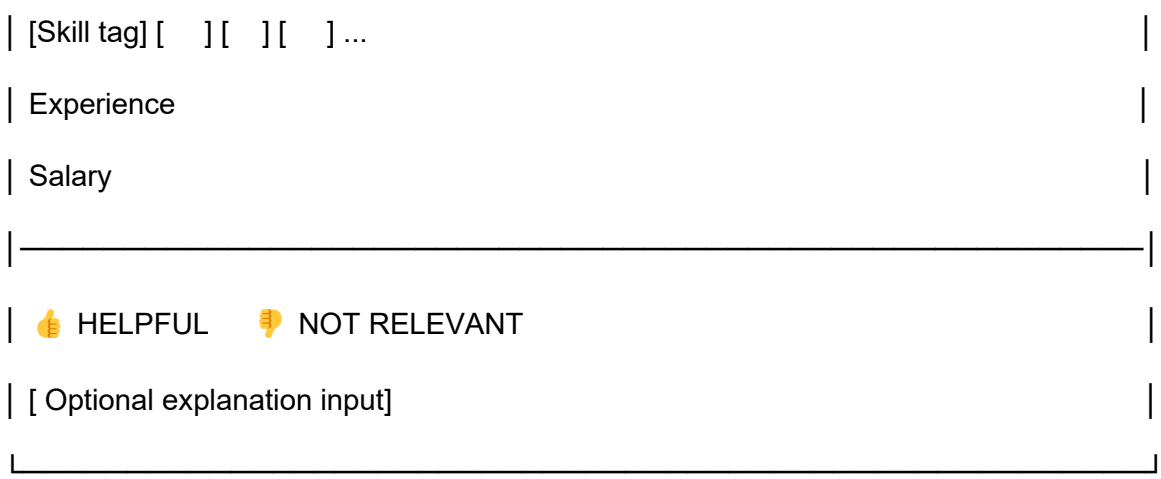
5.1 Overall layout structure:



The structure follows a logical top-to-bottom workflow.

5.2 Candidate card structure:





The ranking percentage is positioned prominently to support rapid assessment.

6 Visual hierarchy and attention flow:

6.1 Hierarchical design:

Visual emphasis is achieved through:

- Variation in font size and weight
- Use of accent colors
- Spatial grouping within cards
- Clear separation between sections

Information priority follows this order:

1. Candidate identity
2. Relevance score
3. Core qualifications
4. Supporting details
5. Feedback controls

This order reflects common recruiter evaluation patterns.

6.2 Anticipated visual scanning pattern:

Users are likely to follow this progression:

Title → Filters → Text input → Search button → Top-ranked candidate → Match score → Skill badges

The layout supports natural reading direction and workflow continuity.

Enhancement possibility:
Introduce a visual progress indicator for match percentage to strengthen ranking visibility.

7 Interaction design overview:

7.1 Search workflow:

The interaction process consists of:

1. Entering job requirements
2. Adjusting filters
3. Activating the search
4. Viewing loading feedback
5. Receiving ranked results

Immediate visual feedback prevents uncertainty during processing.

7.2 Feedback mechanism:

Users can evaluate each candidate via:

- Positive feedback (Helpful)
- Negative feedback (Not Relevant)

An optional text field enables additional context.

This interaction model enhances user involvement and perceived system intelligence.

8 Applied UX evaluation methods:

Multiple usability assessment techniques were utilized.

8.1 Kano model classification:

Features were grouped as follows:

Essential features:

- Functional search
- Filtering options
- Stable interface behavior

Performance features:

- Ranking precision
- Speed
- Clear relevance scoring

Excitement features:

- AI-generated explanations
- Feedback-based adaptation
- Transparent scoring logic

The excitement features represent the system’s main differentiator.

8.2 Five-second impression evaluation:

Participants briefly viewed the interface and reported their understanding.

Findings indicated strong clarity regarding system purpose, search function, and ranking mechanism.

8.3 Customer journey mapping:

A recruiter persona scenario was mapped through:

Entry:
Initial review of filters and instructions

Core interaction:
Submission of criteria and analysis of ranked candidates

Exit:
Feedback provision and decision-making

The initial evaluation of the top candidate emerged as the most influential interaction moment.

8.4 Focus group insights

Discussion participants emphasized:

- The importance of explainability
- The value of numerical scoring
- The usefulness of feedback integration

Transparency was consistently linked to trust.

8.5 Cognitive walkthrough:

A stepwise usability analysis confirmed that:

- Users can identify actions intuitively
- Controls are clearly visible
- System responses are understandable

Minor refinements in labeling were recommended.

8.6 Attention-oriented review:

An assessment of visual competition revealed that skill badges may slightly compete with ranking visibility, though hierarchy remains generally effective.

9 Accessibility review:

Strengths include:

- Clear spacing
- Adequate contrast
- Large interactive elements
- Textual labeling of icons

Recommended enhancements:

- Expanded keyboard accessibility
- ARIA role assignments
- Formal WCAG compliance testing

10 Cognitive load management:

Cognitive demands are controlled through:

- Logical segmentation
- Consistent card formatting
- Minimal color variation
- Clear call-to-action emphasis
- Controlled information density

This ensures users can process candidate information efficiently.

11 Design strengths:

- Clear enterprise-ready presentation
- Transparent ranking mechanism
- Logical workflow alignment
- Adaptive interaction integration
- Balanced information presentation

- Strong first-impression usability

12 Areas for future development:

Potential refinements include:

- Graphical score visualization
- Expandable explanation panels
- Candidate comparison tools
- Enhanced sorting capabilities
- Improved empty-state messaging

13 Final reflection:

The candidate search platform demonstrates effective integration of advanced AI functionality within a structured and user-centered interface design.

The system successfully:

- Enables semantic candidate retrieval
- Communicates AI reasoning transparently
- Encourages interactive adaptation
- Maintains professional usability standards
- Supports recruiter efficiency

Overall, the project illustrates the practical application of UX research methods within a technically advanced full-stack development context.