

Florida International University

Spring 2026 Senior Capstone Design

SearchPal

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Problem

The job application process is highly competitive and time-consuming.

Many companies use Applicant Tracking Systems (ATS) to filter resumes before a recruiter reviews them.

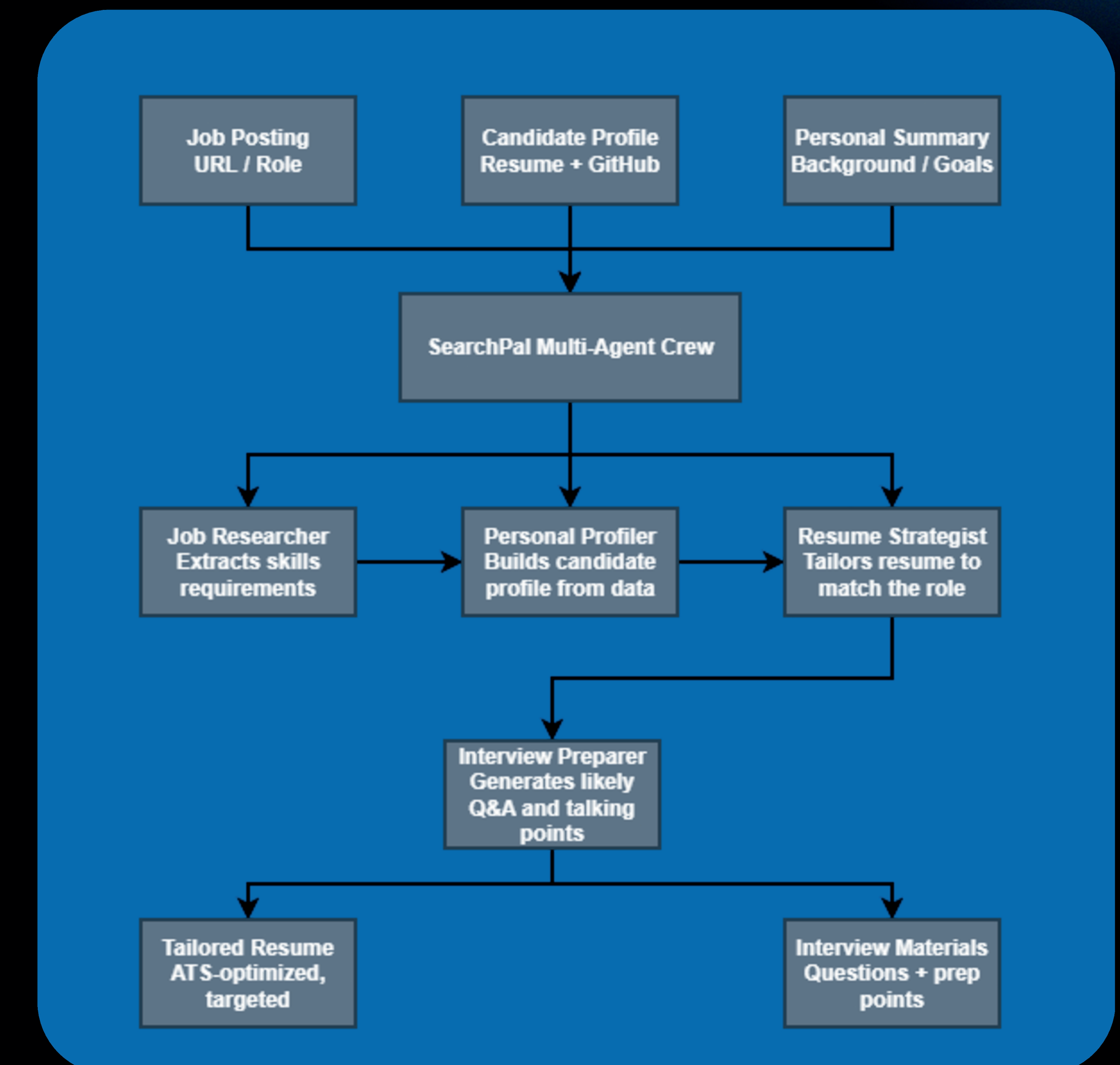
As a result, qualified candidates may be overlooked if their resumes are not tailored to the job description.
Customizing each application manually is repetitive, slow, and inefficient

Tech Stack

- **Language:** Python 
- **Framework:** CrewAI (multi-agent orchestration) 
- **LLM Integration:** OpenAI-compatible API (via CrewAI LLM wrapper)
- **Tools:**
 - Web scraping (ScrapeWebsiteTool)
 - Search augmentation (SerperDevTool)
 - File processing (FileReadTool)
- **Utilities:** dotenv (environment management), argparse (CLI inputs)

Output Format: Markdown-generated documents

Workflow



Solution

SearchPal is an AI-powered multi-agent system that helps automate job application preparation.

The system analyzes a job posting, reviews candidate information such as a resume, GitHub, and personal summary, and then generates:

- Tailored, ATS-aware resume
- Interview preparation materials.

Sample output

```
### Interview Questions and Talking Points for Software Engineer I, Full-Stack (Home and Search Experience) at Affirm

#### General Questions
1. **Can you describe your experience with backend systems development?**
   - Highlight your internship at Tech Innovations where you designed and developed backend systems using Python.

2. **What projects have you worked on that involved API development?**
   - Discuss your work on the RESTful API for the e-commerce platform and how it improved data handling.

3. **How do you approach problem-solving in software development?**
   - Share specific examples of how you have taken a simple problem and developed a solution that interacts with multiple software components.

4. **Can you give an example of a time you had to debug a large codebase?**
   - Talk about your experience during code reviews and debugging sessions at Code Solutions.

5. **What strategies do you use to ensure code quality and maintainability?**
   - Discuss your commitment to writing clear, well-tested, and extensible code.

#### Technical Skills Questions
6. **What is your experience with distributed systems?**
   - Explain your hands-on experience with AWS and Kubernetes during your time at Code Solutions.

7. **Can you discuss your familiarity with MySQL and how you have used it in your projects?**
   - Mention specific projects where you utilized MySQL for database management.

8. **How do you ensure effective communication while working in a remote team?**
   - Highlight your proactive approach to seeking feedback and collaborating with team members.

#### Behavioral Questions
9. **Describe a situation where you had to balance speed and quality in your work.**
   - Provide an example from your internship or projects where you had to meet tight deadlines while ensuring quality.

10. **How do you contribute to the growth and development of your team?**
    - Discuss your involvement in team activities and how you support your peers in their development.

#### Closing Questions
11. **What excites you about working at Affirm and this particular role?
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References

CrewAI documentation
Python documentation
SerperDev documentation
OpenAI-compatible API documentation
Project demonstration materials, including a sample job posting, resume, GitHub profile, and personal summary

Impact

SearchPal improves the job application process by:

- reducing the time required to tailor a resume
- improving alignment between applicant skills and job requirements
- generating personalized interview preparation materials
- demonstrating a practical use of multi-agent AI in hiring support