**AI Career Navigator - Technical Documentation and Instructions**

**Overview:**  
AI Career Navigator is a career guidance platform leveraging AI for personalized recommendations, skill gap analysis, and learning paths, built using the MERN stack with additional AI capabilities.

**System Requirements:**

* Modern browser (Chrome, Firefox, etc.), stable internet, 1280x720 resolution.
* Node.js v14+, MongoDB Atlas account, environment variables configured.

**Tech Stack:**  
**Frontend:** React.js, Material-UI, Redux Toolkit, React Router, Recharts, Nivo, React Simple Maps, Vis Network, Axios.  
**Backend:** Node.js, Express.js, MongoDB with Mongoose, JWT, PDF Parse, HuggingFace API, Express Validator, Multer.

**Architecture:**  
**Frontend:** Responsive design, Redux state management, JWT-protected routes, visualization components.  
**Backend:** RESTful APIs, JWT-based auth, MongoDB schemas, HuggingFace integration for AI recommendations.

**Installation:**

1. Clone repo: git clone [repository-url].
2. Setup backend:
3. cd backend
4. npm install
5. npm start
6. Setup frontend:
7. cd frontend
8. npm install
9. npm start
10. Configure .env files for API keys, DB connection, and JWT secrets.

**Usage Instructions:**

1. **Registration & Login:** Sign up, verify email, and log in.
2. **Profile Setup:** Enter details, upload resume, and save.
3. **Career Assessment:** Complete questionnaire for detailed results.
4. **Recommendations:** View AI-generated paths with job roles, skills, and salaries.
5. **Skill Gap Analysis:** Compare current vs. required skills with learning recommendations.
6. **Resume Analysis:** Upload, review AI feedback, and download improved resume.
7. **Interview Prep:** Access questions, mock interviews, and feedback.
8. **Dashboard:** Track progress, manage saved careers, and customize widgets.

**Security Features:**

* **Authentication:** JWT tokens, encrypted passwords, role-based access.
* **Data Protection:** XSS prevention, CORS, secure file handling.
* **API Security:** Rate limiting, request validation, secure environment variables.

**Testing:**

* Jest for unit, API, and component testing.
* ESLint for code quality and error handling.

**Troubleshooting:**

* **Login issues:** Clear cache, reset password, verify email.
* **Resume upload issues:** Ensure correct format, size < 5MB.
* **Assessment loading issues:** Check internet, refresh, clear cache.

**Future Plans:**

* Enhanced AI models, real-time support, mobile app, advanced analytics.
* Scalability with microservices, load balancing, and caching.

**External Links:**

* **GitHub Link :** https://github.com/Abishek-2425/Ai-Career-Navigator
* **Deployed Web App Link :** https://acn-frontend.onrender.com