



FULL STACK DEVELOPMENT

DETAILED CURRICULUM

MAY 2025

www.theskillians.com



@TheSkillians

About Full Stack Developer Pro

Learn the intricacies of data structures and algorithms and prepare for a career in full-stack development with Skillians.

This rigorous program expands your coding and web design expertise by equipping you with technical knowledge in both front-end and back-end development.

Built on a project-based learning methodology, the curriculum is one of the most expansive in the industry — helping you quickly grasp essential full-stack technologies through hands-on sessions.

With over 450 hours of intensive practical training, Skillians ensures you're fully job-ready to begin your journey as a full stack developer.



Program Highlights



Live Learning

The faculty will help you establish a DSA and full-stack development foundation through online live interactive courses. The teaching assistants will lead hands-on projects and practice sessions.



Dedicated Career Services

Our career services include resume development, profile enhancement, interview preparation workshops, mock interviews and one-on-one career counselling. You will get personalised mentorship and support to succeed in job interviews.



Job-focused Curriculum

Develop a strong foundation in data structures and algorithms and learn popular full-stack technologies like Java, Spring, MongoDB, JavaScript, React, Docker, and Jenkins. Build end-to-end software applications and be a skilled full-stack developer.



Hackathon and Coding Challenges

Participate in Coding Challenges and Hackathons, delivered by our community initiative to tackle complex business problems and make your resume stand out.



Assured Interview Opportunities

We have placed over 1500 students in leading companies with our job-guarantee program. You will get access to opportunities with our 500+ hiring global partners. You will get placed between an average salary range of 6 to 10 LPA through assured interview opportunities.

Placement Overview



1500+
Students Placed



24 LPA
Highest Salary



80%
Average Salary Hike



500+
Hiring Partners

Our alumni work at:



Shreyanshu Kumar
Before Skillians:
Fresher

Placed at:



Ajay kumar
Before Skillians:
Fresher

Placed at:



Gautam Sharma
Before Skillians:
Fresher

Placed at:



Iti jain
Before Skillians:
Fresher

Placed at:



Omkar Krishna Sharma
Before Skillians:
Fresher

Placed at:



Garima Sharma
Before Skillians:
Fresher

Placed at:



Fundamentals Curriculum

Build a strong foundation in front-end development and web design with HTML and CSS. Also, learn the fundamentals of programming with Python. With hands-on practice, become proficient in the syntax, structure, and usage of these technologies and develop problem-solving skills.



Week 1-2: Introduction to Data Structures

- Overview of data structures, time and space complexity analysis, arrays, linked lists.
- Stacks, queues, and basic data structure implementation.

Week 3-6: Trees, Heaps, and Hashing

- Trees, binary search trees (BSTs), balanced trees (AVL, Red-Black).
- Priority queues, heaps, and heap sort.
- Hashing fundamentals, hash tables, collision resolution.

Week 7-10: Graphs and Advanced Data Structures

- Graph representations, DFS, BFS.
- Shortest path algorithms, minimum spanning trees.
- Disjoint Set (Union-Find), Trie, B-trees.

Week 11-14: Advanced Topics and Applications

- Suffix trees/arrays, Bloom filters, geometric data structures.
- Parallel/concurrent data structures, real-world applications.

Week 15-16: Review and Final Projects

- Review key concepts, problem-solving sessions.
- Final project presentations, course wrap-up, Q&A.

Languages and Tools Covered





Full Stack Web Development

Build a strong foundation in web development and design by mastering HTML and CSS, essential tools for creating structured and visually engaging websites. Alongside, learn the fundamentals of programming with Python to develop logical thinking and problem-solving abilities. With hands-on practice, gain proficiency in the syntax, structure, and real-world application of these technologies

Week 16–18: MongoDB and Express.js

- Learn MongoDB and Express.js concepts, CRUD operations, indexing, and API building.
- Understand arrays, linked lists, and their time and space complexities.

Week 18–21: Authentication and Security

- User registration/login, securing routes.
- Best practices for authentication and security.

Week 21–23: Advanced Express.js and Node.js

- Middleware functions, file handling, validation.
- Asynchronous JavaScript, Promises, async/await.

Week 23–27: React Basics and State Management

- Introduction to React, setting up projects.
- Components, JSX, props, state, event handling.
- React Router, local vs. global state, Context API, Redux.

Week 27–29: Advanced React Concepts

- React Hooks, forms and validation.
- Styling with CSS-in-JS, working with APIs.

Languages and Tools Covered





Advanced Topics and Projects

Explore advanced topics in web development, including responsive layouts with Flexbox and Grid, and best practices in design and accessibility using HTML and CSS. Enhance your Python skills with deeper concepts like data structures and file handling. Work on hands-on projects that simulate real-world scenarios, helping you apply your knowledge effectively and build confidence for full stack development.

Week 29–30: Full-Stack Application Development

- Integrating frontend/backend, user authentication with JWT.
- Deploying application to a cloud platform.

Week 30–31: Real-Time Applications

- Introduction to WebSockets, building a real-time chat app.
- Using Socket.io or similar libraries.

Week 31–32: Performance Optimization

- Profiling, debugging, code splitting, lazy loading.
- Performance best practices.

Week 32: Final Project

- Designing and building a complex MERN stack application.
- Project planning, execution, deployment, and showcasing.

Industry-specific Projects

This experiential program involves working on various real-world projects to gain practical experience. As part of your project work, you will create applications that demonstrate your ability to become a full-stack developer.

Real-time Chat Application



Description: A real-time chat application that allows users to create accounts, join chat rooms, and exchange messages instantly.

Tech Stack :

- Frontend: React.js with Socket.io for real-time communication
- Backend: Node.js with Express.js
- Database: MongoDB

E-commerce Platform



Description: An e-commerce platform where users can browse products, add them to cart, make purchases, and review products.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Payment Gateway: Stripe or PayPal API

Social Media Platform

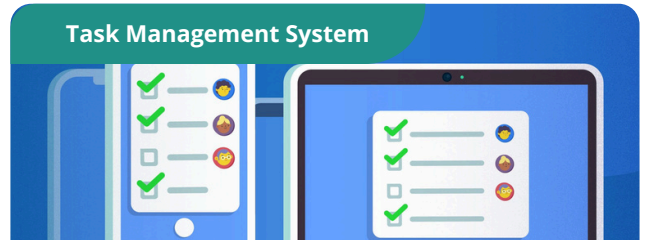


Description: A social media platform where users can create profiles, connect with friends, share posts, and comment on posts.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Authentication: JWT (JSON Web Tokens)

Task Management System



Description: A task management system where users can create tasks, assign them to team members, set deadlines, and track progress.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB

Advance Projects

Online Learning Platform



Description: An online learning platform where instructors can upload courses, and students can enroll, watch videos, complete quizzes, and receive certificates.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Video Streaming: AWS S3 and CloudFront or Vimeo API

Job Board



Description: A job board where employers can post job openings and job seekers can search and apply for jobs.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB

Expense Tracker



Description: An expense tracker where users can log their expenses, categorize them, and visualize spending habits.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Visualization: Chart.js or D3.js

Recipe Sharing Platform



Description: A platform where users can share, browse, and search for recipes.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Search: Elasticsearch

Advance Projects

These project ideas are challenging and will allow you to delve deep into the MERN stack, gain hands-on experience, and build a robust full-stack web application. Good luck with your projects!

Blog Platform



Description: A blogging platform where users can create, edit, and publish blog posts, and readers can comment on posts.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB

Collaborative Code Editor



Description: A real-time collaborative code editor where multiple users can edit the same code file simultaneously.

Tech Stack :

- Frontend: React.js
- Backend: Node.js with Express.js
- Database: MongoDB
- Code Editor: Ace or CodeMirror



Program Outcome

1500

Learners Placed

6.25x

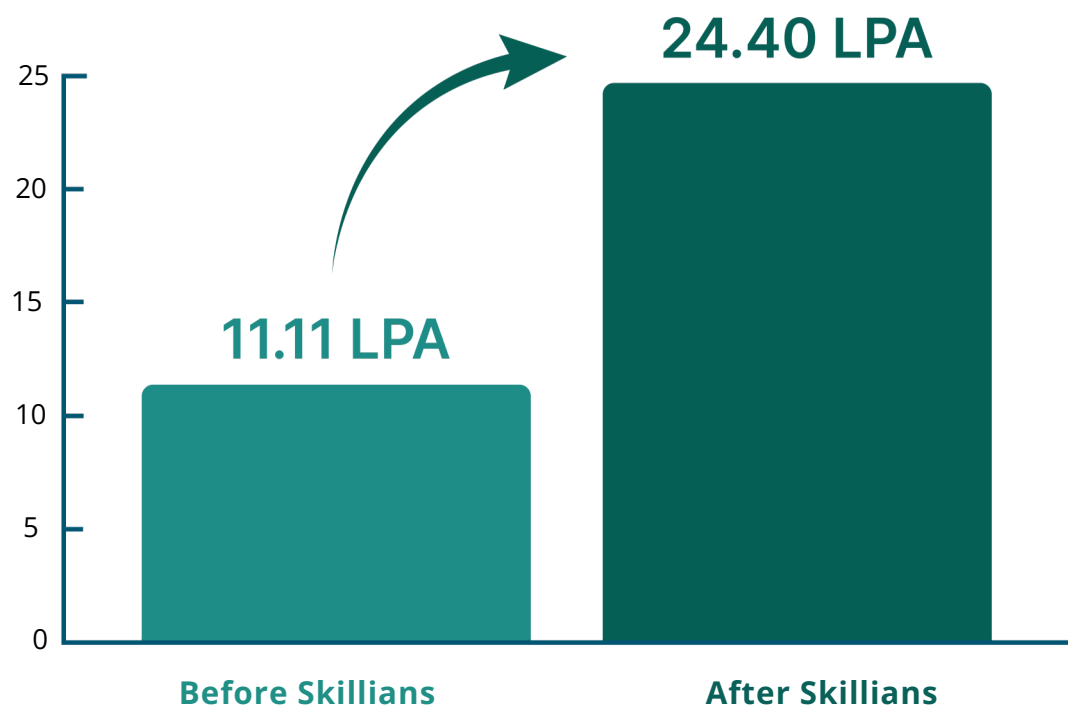
Return on Investment

24 LPA

Highest Package

80%

Salary Hike



Average CTC

Learners' Profiles



Final year students from STEM background (preferably CS, IT, Electronics) with min 50% marks



Fresh graduates/Postgraduates in STEM (preferably CS, IT, Electronics) with min 50% marks

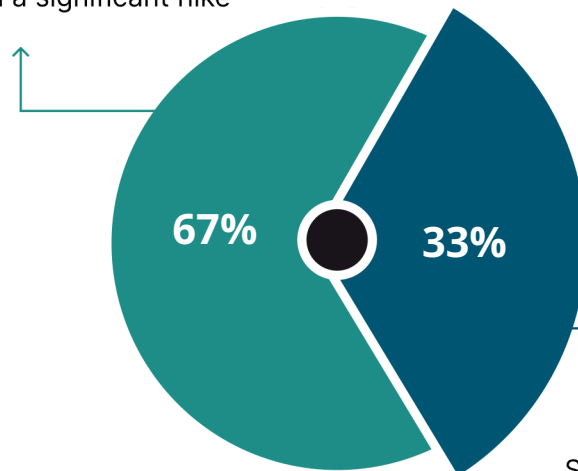


Experienced Professionals (0 to 3 years) in IT roles

You can join even if you're new to programming – we've got you covered.

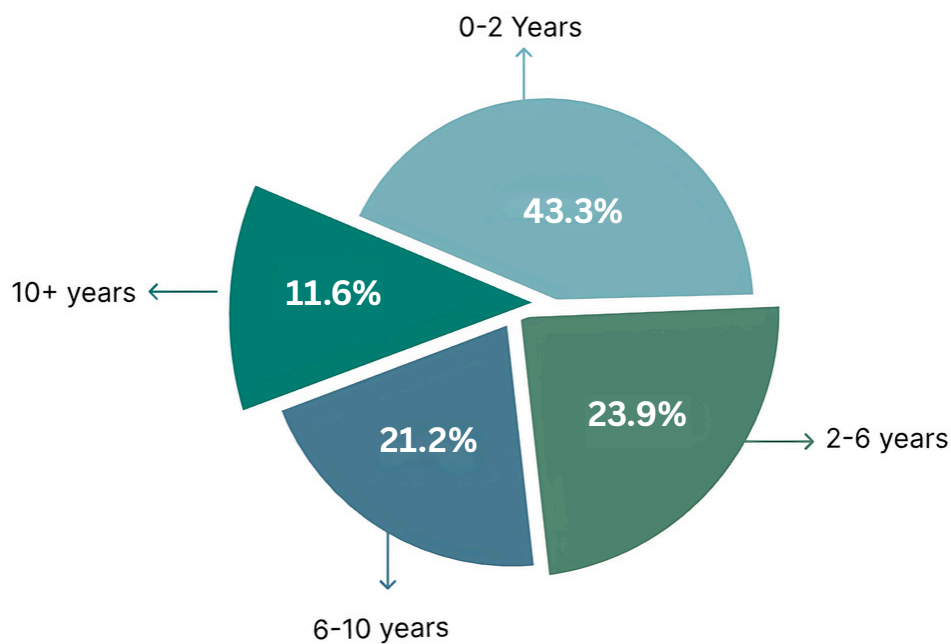
Skillians Learning Transition

Learners shifted to a product-based company with a significant hike

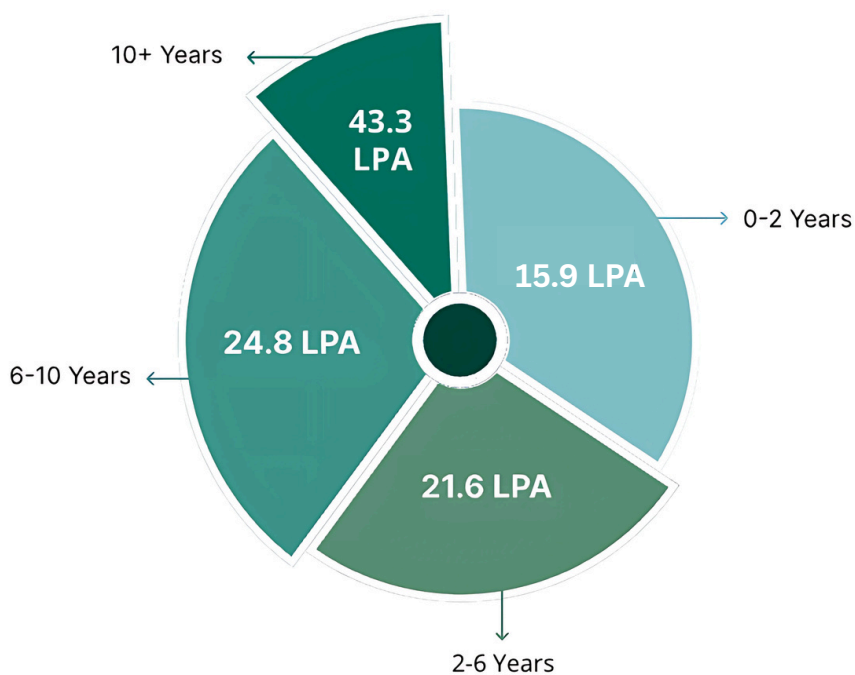


Learners shifted from SDE to senior-level roles

Skillians Learner's Experience



Average CTC based on Years of Experience



Grow with The Skillians

At Skillians, we're focused on delivering an integrated learning experience that extends beyond the classroom. With our one-of-its-kind career support services, we continue to guide you as you step into your career with renewed clarity and confidence. Gain access to over 500+ placement partners and give your career the competitive edge it deserves.



Resume Building

Redesign your resume with professional help and highlight your strengths in the best possible way.



Enhancement

We assist you in building a robust portfolio to ensure that your profile always catches the eye of prospective employers.



Interview Prep

We have analysed the most commonly asked interview questions and built a training module with mock interviews that will confidently prepare you for job interviews.



Career Mentoring

Resolve all your career-related queries in a 1:1 session with an industry expert.

What Our Students Say



Shreyanshu Kumar

I would like to thank the Skillians team for providing me with an excellent platform to kickstart my career. I had the opportunity to participate in a hackathon through Skillians, and it was a great learning experience. I truly appreciate the entire team's dedication, support, and efforts throughout the journey.

Placed At:  McKinsey & Company



Iti Jain

Skillians has been a game-changer in my career journey. The mentorship, hands-on projects, and guidance I received helped me gain real-world exposure. Participating in the hackathon organized through Skillians boosted my confidence and skills immensely. Thank you to the entire team for the constant support!

Placed At: **NETFLIX**



Omkar Krishna Sharma

I'm incredibly grateful to Skillians for providing such a supportive and practical learning environment. The hackathon experience gave me a real taste of industry-level challenges and improved my problem-solving abilities. Kudos to the team for creating such impactful opportunities

Placed At:  **Stealth Startup**

What Our Students Say



Ajay kumar

I'd like to thank Skillians for being an integral part of my professional journey. The hackathon I participated in was not only a great learning experience but also gave me a chance to connect with like-minded peers. The team's commitment and support made the whole experience smooth and enriching.

Placed At:  **paytm**



Garima Sharma

Joining Skillians was one of the best decisions I've ever made for my professional growth. Before this, I was constantly hopping between courses, unsure of how to build a career that aligned with my interests. Skillians offered clarity, structure, and real opportunities. The hands-on learning, mock interviews, and mentor sessions were incredibly impactful.

Placed At:  **GE HealthCare**

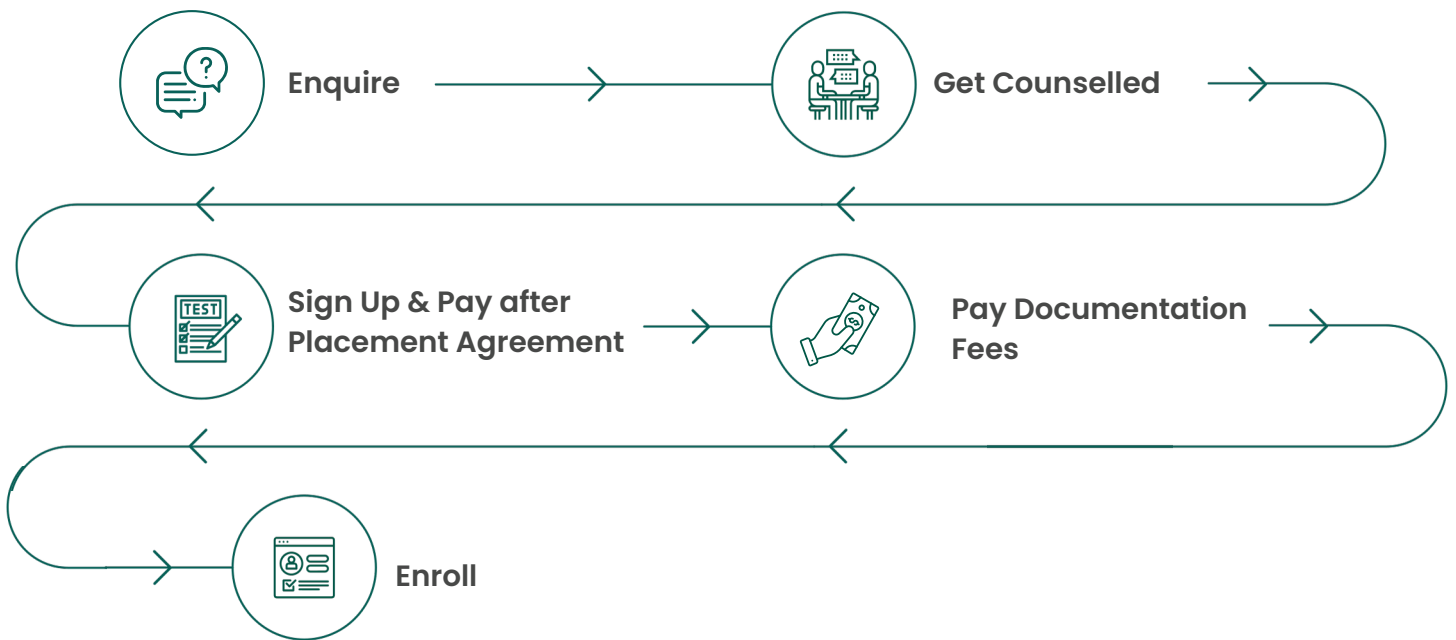


Gautam Sharma

I'll always credit Skillians for helping me transform from a confused fresher to a confident professional. The journey with them was filled with growth, learning, and constant support. I was introduced to real-world challenges through hackathons and projects that gave me the exposure I desperately needed.

Placed At:  **SWIGGY**

Admission Process



Step into the world of full-stack development with Skillians and build a bright future.



For more information, contact us:



support@theskillians.com

www.theskillians.com



+91 7009413969



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