

# [Hyperledger - Web3J]

## Hyperledger Mentorship 2024

### Enhancing Android Support with Updated web3j-android Integration

---

**Name:** Shashank Kumar

**GitHub:** [shashankiitbhu](#)

**LinkedIn:** [shashank-k-606](#)

**Email:** [shashank.kumar.phe22@itbhu.ac.in](mailto:shashank.kumar.phe22@itbhu.ac.in)

**Alternate Email:** [shashankkumar45556@gmail.com](mailto:shashankkumar45556@gmail.com)

**Country:** India

**Time Zone:** IST (UTC+05:30)

**Institution:** Indian Institute of Technology (BHU) Varanasi

**Course:** Bachelor of Technology in Engineering (B.tech)

---

### How did you find out about our mentorship program?

I found out about the LFX mentorship program through one of my friends. On exploring the site, I saw the program listed under open applications.

### Why are you interested in this program?

I am highly interested in the Hyperledger Mentorship Program, particularly the Web3J project, due to its alignment with my skills in Android app development and Java. My recent experience with blockchain projects, such as working with CORD, has sparked a strong fascination with blockchain technology. I see this program as an invaluable opportunity to deepen my expertise in Hyperledger frameworks and contribute meaningfully to the advancement of decentralized applications.

### What experience and knowledge/skills do you have that are applicable to this program?

I am a seasoned Android app developer with a strong track record of creating successful applications. My notable achievements include:

- Developing and publishing Android applications that have collectively amassed over **40,000 downloads**. One of my applications, the [Android-Java Programming Tutorial App](#), serves as an educational tool for learning Java programming on Android devices.
- Founding the startup "**Opined**," where I developed a social media application using Java, Kotlin, and Jetpack Compose. This app, [Opined](#), achieved over 10,000 installs on the Play Store and was selected for **Google's Appscale Academy 2022 Cohort**, a testament to its quality and potential. [More about the program](#).
- Earning certifications as a **Google Certified Associate Android Developer** and an **Oracle Certified Java Programmer**, which validate my expertise in Android development and Java programming. [View my certification](#).
- **OPEN SOURCE CONTRIBUTIONS : (My Github - [shashankiitbhu](#))**
  - Contributed to the **Wikimedia Commons Android App**, where I have submitted [several pull requests](#) that have been successfully merged, showcasing my ability to collaborate on open-source projects.
  - Contributed to **Blockchain Framework - CORD**, you can see my pull requests [here](#)
  - Contributed to **Android Unit Testing Framework - Robolectric** and also got Selected in **Google Summer of Code** in Robolectric.

My experience spans a range of technologies, including the Java programming language, Android SDK, Android development, Kotlin, Jetpack Compose, and databases. I have a solid understanding of Ethereum Blockchain and Smart Contracts. These skills and experiences will only me to meaningfully contribute to this program.

## What do you hope to get out of this mentorship experience?

I hope to deepen my understanding of blockchain technology within Android development through this mentorship. My goal is to refine my skills in Ethereum integration and smart contract development using web3j, while also expanding my professional network.

## Project Proposal

**Title:** Enhancing Android Support with Updated web3j-android Integration

**Description:** The goal is to bring it in line with modern Android development practices and the latest Ethereum blockchain technologies. This project will focus on establishing a unified versioning and release strategy, enhancing compatibility with the latest Android SDK versions, refactoring the codebase for improved support, and introducing thorough testing and documentation. Ultimately, the aim is to revitalize the Web3j-android library, making it a robust

and user-friendly tool for developers looking to integrate blockchain functionalities into their Android applications.

### **Implementation and Plan:**

- **Week 1-2:**
  - Review current architecture, dependencies, and Android guidelines.
  - Analyze existing codebase, identify strengths, weaknesses, and areas for improvement.
  - Evaluate compatibility with latest Android SDK versions and Ethereum blockchain technologies.
  - Discuss project objectives and requirements with stakeholders and mentors.
- **Week 3-4:**
  - Draft detailed plan for versioning, compatibility, and testing.
  - Develop roadmap outlining specific tasks, milestones, and deliverables.
  - Define versioning strategy aligned with web3j core releases.
  - Identify key areas for Android compatibility enhancements and code refactoring.
- **Week 5:**
  - Analyze current versioning and branch management.
  - Review existing versioning practices and identify areas for improvement.
  - Discuss with mentors and stakeholders to gather feedback and insights.
- **Week 6:**
  - Propose and implement streamlined versioning process.
  - Define clear versioning guidelines and release cycles.
  - Establish version control mechanisms to ensure smooth collaboration and integration.
- **Week 7:**
  - Adjust minSDKVersion and targetSDKVersion for wider applicability.
  - Update Android compatibility settings to support recent SDK versions.
  - Test compatibility across different Android devices and configurations.
- **Week 8:**
  - Test compatibility with recent Android versions while ensuring backward compatibility.
  - Conduct thorough testing to identify and address compatibility issues.
  - Implement backward compatibility measures to ensure support for older Android devices.
- **Week 9:**
  - Address sourceCompatibility and targetCompatibility issues for Java compatibility.
  - Ensure compatibility with Android-compatible Java APIs.
  - Resolve any compatibility issues with Java versions supported by Android.

- **Week 10:**
  - Refactor codebase for improved support and compatibility in Android context.
  - Optimize code structure and organization for better maintainability.
  - Enhance error handling and performance optimizations.
- **Week 11:**
  - Review and update dependencies to ensure compatibility with Android standards.
  - Update gradle.properties and other dependency management files.
  - Resolve conflicts and build issues arising from dependency updates.
- **Week 12:**
  - Finalize dependency updates and ensure smooth integration with existing codebase.
  - Conduct comprehensive testing to verify compatibility and functionality.
  - Prepare documentation outlining updated dependencies and integration guidelines.

**Future Deliverables:**

Beyond the mentorship, I am committed to remaining an active member of the Hyperledger community and contributing to its growth. I envision continuing my engagement by sharing insights, collaborating on projects, and advocating for blockchain adoption. By leveraging the skills and knowledge gained during the mentorship, I aim to make lasting contributions that advance the field of decentralized technologies within the Hyperledger ecosystem.