DANIEL BÄLZ

Senior Android Developer

https://dbaelz.de 🌐

I help you to develop high-quality Android apps.

Since my first Android app in 2011 I've been an enthusiastic Android developer.
In my previous projects, I have worked on several large-scale apps that have been installed millions of times. Based on this experience, I pay special attention to the development of maintainable, modern and high-quality apps with a well-structured architecture and extensive tests.

How can I support you?

Design of the app architecture
App development
Automated testing
CI/CD and distribution of the app
Knowledge building and working in agile teams

App architecture

I have extensive knowledge of modern app architectures and experience in new projects and the modernization of existing applications. My favorite tech stack is based on MVVM, clean architecture with use cases, repository pattern and dependency injection.

App development

In my previous projects, I have used a wide range of technologies and libraries. This includes Kotlin, dependency injection with Koin, declarative UIs with Jetpack Compose and tests with MockK and Espresso. Nevertheless, I also have extensive experience with other technologies and use them when appropriated.

Workflow, CI/CD and Distribution

A thriving project requires a defined workflow, a reliable build system and a functioning CI/CD. In all three areas I can provide you with in-depth experience and help you to publish new apps successfully.

Agile Methods

Working in agile teams is essential for me. As a developer and as a Scrum Master, I have used agile methods and supported the teams in the implementation. This also includes mentoring/coaching and the systematic development of knowledge/skills of the developers.

Skills

Architecture
- MVVM with clean architecture (use case, repository pattern, dependency injection)
- Modernization of apps, e.g. migration from MVC or MVP to MVVM
- Modularization using Gradle modules and extract code into libraries
- Shared code base, e.g. for Android, Android TV and Fire TV
- Code sharing with Kotlin Multiplatform Mobile

Development
- Development in Kotlin and Java
- Reactive Programming with Coroutines, Flow and RxJava
- Dependency injection with Koin, Dagger 2, Hilt and Anvil
- Unit testing with MockK, Spek and Mockito. Instrumentation tests with Espresso and Kakao
- UIs with the Android View System or Jetpack Compose
- Extensive knowledge of Jetpack libraries like Room, LiveData, Data Binding and Navigation
- Network communication with Retrofit, Gson and Moshi
- Streaming technologies like ExoPlayer, Google Cast SDK/Chromecast, Amazon Fling
- Amazon ecosystem, e.g. Login With Amazon and In-App Purchase API
- Reporting with Google Analytics
- A/B testing with Firebase

Workflow, CI/CD and Distribution
- Experience with multiple workflows, e.g. Git Flow
- Gradle build system with Groovy and the Kotlin DSL
- CI/CD with GitLab CI, Jenkins and Bitbucket Pipelines
- Monitoring with Firebase, App Center, Sentry and Bugsnag
- Distribution of the app in Google Play and Amazon Appstore

Agile Methods
- Agile mindset and experience as developer
- Mentoring and coaching of developers
- Professional Scrum Master I (PSM I)

Experience

Public Service/Federal (NDA)

06.2023 - today

Development of an internally used Android app as an information system for the federal government. With a focus on long-term maintainability and high robustness of the application.

- Development of the app, especially the optimization of the existing MVVM architecture
- Knowledge transfer to the team in the field of clean code and modern principles of Android development
- Introduced the declarative UI framework Jetpack Compose
- Development of new features with a focus on offline capability and use as a geoinformation system
- Expansion of CI/CD pipeline and test coverage

Exaring AG/waipu.tv

01.2022 - 03.2023

Modernization and further development of the existing Android app of the VoD/streaming platform. This with an emphasis on updating the architecture and improving the code quality.

- Concept for a new target architecture together with the development team
- Implementation of the MVVM architecture and Clean Architecture
- Introduction and knowledge transfer for the declarative UI framework Jetpack Compose
- Development of new features based on the introduced architecture
- Migration of Java source code to Kotlin
- Optimization of the CI/CD pipeline and the distribution to Google Play and Amazon Appstore

Trade Republic

10.2021 - 12.2021

Consulting and development of the Android app of a leading European online broker. Focus on the technical renewal of the UI and improvement of the UX.

- Support in the usage of the declarative UI framework Jetpack Compose
- Development of a library of reusable UI components in collaboration with the Android team and designers
- Performance analysis of the newly developed Jetpack Compose UI
- Interoperability with the existing Android View System UI

Senior Android Developer | inovex GmbH

11.2015 - 09.2021

Responsibilities

inovex is an IT service provider that develops high-quality software solutions with and for their customers. During my time at inovex, I advised customers in the concept phase of their projects and implemented them as a developer.

In addition to these customer projects, my responsibilities included:
- External and internal knowledge transfer through talks and articles
- Organization of the internal knowledge process as Innovation Circle Lead for the "Apps" topic
- Mentoring of internal colleagues and developers in customer projects
- Supervision of several theses and of working students

Projects

TVNOW (now RTL+)

03.2019 - 05.2021

Development of the Android app of a leading German VoD/streaming platform. I was part of an existing app team and had the initial task to adapt the code base so that it could be used for Fire TV and Android TV.

- Creation of a concept to adjust the existing code base so it could be used for Fire TV and Android TV
- Implementation of this concept including non-functional features such as focus handling using a remote control
- Implementation of important features for the Amazon ecosystem such as Amazon In-App Purchase and Login with Amazon
- Development of the app using libraries like Koin, Retrofit, Gson, Moshi, Coroutines & Flow, ViewModel, Live Data, Room, Leanback, Google Play Services and many more
- Planing of a comprehensive refactoring to modernize the MVC-based architecture
- Implementation of the new MVVM architecture, including the transfer of knowledge to the existing team
- In-depth reporting with Google Analytics and Adjust
- Migration of the CI/CD pipeline from Jenkins to Gitlab CI
- Establishing of a unified workflow with Git Flow, a coding standard based on clean code and a common understanding of the architecture and code quality
- Design of a test concept for the automated testing of the components. Implementation of this concept using JUnit, MockK, Espresso and Kakao
- Rework of code that had already been migrated to Kotlin to make the code more idiomatic and less error-prone
- Extensive refactoring of features and proactive bug fixing to increase the app stability

IoT Device Manufacturer (NDA)

11.2018 - 02.2019

Takeover of an existing Android app for an IoT device in the automotive sector. The device is based on the Android Open Source Project and the app is responsible for updating the Android operating system, all installed apps and a connected Linux operating system.

- Development of the app using Java and libraries such as Retrofit, Guava, Eclipse Californium
- Analysis of the existing code and based on this, creation of a refactoring concept
- Concept and implementation of the revised app architecture
- Implementation of monitoring with Acra
- Integration of device-specific operating system APIs
- Development and implementation of an automated test concept for device and app updates using JUnit and Mockito

Exaring AG/waipu.tv

01.2016 - 11.2018

I've started in the initial (two person) Android team and worked out the first concept, implemented it and was involved in the development of the app all the way to go live and beyond.

- Design and implementation of the basic MVP architecture and app structure of the Android and Fire Tablet app
- Development of the UI design jointly with the product owner and designer
- Initial implementation with Java and later migration of parts to Kotlin
- Development of the app using libraries such as Google Play Services, Dagger, Retrofit, RxJava, Glide
- Implementation of video streaming on the end device and receiver devices using ExoPlayer, Google Cast SDK and Amazon Fling SDK
- Reporting with Google Analytics and Adjust
- Development of complex, individual UI components
- Integration into the Amazon ecosystem: Login With Amazon, Amazon In-App Purchase and Amazon Fling SDK
- Design/discussion of REST APIs with the backend team and subsequent integration into the app
- Creation of a test concept for manual and automated testing. Implementation of automated tests with JUnit, Mockito, Powermock and Espresso
- Utilization of a CI/CD pipeline with Gitlab CI
- Distribution and monitoring with HockeyApp and Crashlytics/Fabric
- Conducting technical interviews for the customer

10.2018 - 11.2018

Switched roles to Scrum Master to substitute the Scrum Master of the backend team for this period. In addition, I supported the agile coach in the overall transformation of the company into an agile organization. This experience gave me another perspective on agility and the opportunities and challenges associated with it.

Cellular Provider (NDA)
11.2015 - 11.2016

Further development of an existing self-service Android app with the aim of modernizing it, reducing technical debt and delivering new features faster and more reliably.

- Analysis of the current code base and development of a modernization concept
- Extensive refactoring and development of automated tests
- Implementation of new features and an improved UX
- Improvement of the CI/CD pipeline and build system, e.g. multi-flavor builds
- Technologies used: Java, Retrofit, Picasso

Master Thesis | inovex GmbH

04.2015 - 09.2015

English-speaking master thesis with the title "Adaptive code execution in a monoglot, distributed runtime environment". As part of my thesis, I created a concept to execute the source code dynamically, depending on the available resources, on the client or server. The technology used in this thesis was Dart and I developed and released two libraries, which implemented the core concept.

Junior Android Developer/Working Student | inovex GmbH

09.2013 - 05.2015

Responsibilities

As a Junior Android Developer, I was involved in several Android projects while being a working student. In this time I was able to build up knowledge and gain experience in real project situations.

Projects

International Construction Machine Seller (NDA)

09.2014 - 12.2014

Worked as junior developer as part of a team that created an Android app for a construction machinery seller. The app showed information about the construction machines, had a search for equipment and to contact sales. My tasks included:

- Working on the architecture with the support of a senior developer
- Independent implementation of features. For example the search for equipment
- Development of automated unit and instrumentation tests
- Bug fixing and monitoring after the app release
- Distribution of the app with a Jenkins CI/CD pipeline

Bachelor Thesis | inovex GmbH

04.2013 - 07.2013

Bachelor thesis with the title "Miracast on Android". The bachelor thesis examined the wireless standard Mircacast of the Wi-Fi Alliance and its integration in Android. Also, potential application fields were examined and afterwards evaluated with several example implementations.

Education

Master of Science - Computer Science | Hochschule Karlsruhe

2013 - 2015

Bachelor of Science - Computer Science | Hochschule Karlsruhe

2009 - 2013