Boyfriend Mode - High Level MVP Document

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Summary: Boyfriend Mode is an iOS app that provides instant photography assessment using AI, focusing on three categories: Portrait, Landscape, and Street Photography. It offers real-time feedback, prioritizes user privacy by processing data on-device, and aims to educate users on photography techniques. The target market includes amateur photographers, social media creators, and photography students, with a projected market opportunity of $1.5B. Key features include photo classification, modular assessment, and user-friendly experience. The MVP will include basic assessment capabilities, with plans for future enhancements like real-time camera assessment and social sharing.

Photo Assessment App for iOS

Executive Summary

Boyfriend Mode is an iOS application that leverages the iPhone's onboard Neural Engine to provide instant, on-device photography assessment and feedback. Named after the cultural phenomenon of "Instagram Boyfriends" who master the art of capturing perfect photos, this app democratizes professional photography knowledge through AI-powered assessment.

The app evaluates photos across three categories (Portrait, Landscape, Street Photography) using established composition rules and techniques, providing both a simple 1-10 score and detailed feedback on specific photographic principles—all processed locally on device for maximum privacy and speed.

Vision & Value Proposition

Vision Statement

To become the go-to mobile companion for aspiring photographers, providing instant, professional-grade feedback that transforms anyone into a skilled "Instagram Boyfriend" capable of capturing stunning photos.

Core Value Proposition

- **Instant Feedback**: Real-time assessment without internet connectivity
- **Privacy-First**: All processing happens on-device with no data sent to servers
- **Educational**: Learn professional photography techniques through practical application

- **Beginner-Friendly**: Simple scoring system with detailed, actionable feedback
- **Portfolio Building**: Track improvement over time with assessment history

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Total Addressable Market (TAM)

Market Sizing

Primary Market Segments:

1. **Amateur Photographers & Hobbyists**
   - 200M+ iPhone users globally interested in photography
   - 82% of millennials and Gen Z regularly share photos on social media
   - Growing interest in photography as a hobby (45% increase since 2020)
2. **Social Media Content Creators**
   - 50M+ active content creators globally
   - Average creator takes 50-100 photos per post
   - Seeking tools to improve content quality
3. **Photography Students & Learners**
   - 2.5M photography students worldwide
   - 15M+ enrolled in online photography courses annually
   - Looking for practice and feedback tools

Market Opportunity

- **TAM**: $4.2B (Global mobile photography app market)
- **SAM**: $1.5B (iOS photography education/assessment apps)
- **SOM**: $150M (Achievable market share in 3 years)

Growth Drivers

- Increasing smartphone camera capabilities
- Rise of visual-first social platforms (Instagram, TikTok, BeReal)
- Growing demand for authentic, high-quality content
- Shift toward self-improvement and skill development apps

Functional Requirements

Core Features

1. Photo Classification & Assessment

- Automatic detection of photo type: Portrait, Landscape, or Street Photography
- Overall score (1-10) based on weighted criteria specific to each category

- Real-time processing using existing open-source models

2. Assessment Architecture

Modular Assessment Approach

The app will use a modular assessment system where different photographic principles are evaluated independently and combined based on photo classification. Each photo type (Portrait, Landscape, Street) will utilize a specific combination of assessment modules with appropriate weightings.

Core Assessment Modules (Leveraging Existing Technologies)

- **Composition**
  - Rule of thirds, balance, negative space
  - *Technology*: Vision API's Saliency Analysis, Attention-based models
- **Focus & Sharpness**
  - Critical focus points, depth of field, blur detection
  - *Technology*: Vision API's Image Quality metrics, Laplacian variance
- **Lighting**
  - Quality, direction, contrast, exposure
  - *Technology*: Histogram analysis, Vision API's exposure/brightness detection
- **Geometry**
  - Lines, patterns, framing, perspective
  - *Technology*: Vision API's Rectangle/Horizon Detection, Edge detection models
- **Depth**
  - Layering, foreground/background relationships
  - *Technology*: Depth estimation models (MiDaS), Vision API's Depth Data
- **Subject**
  - Human elements, expressions, moments
  - *Technology*: Vision API's Face/Person Detection, Pose estimation models

Classification-Based Assessment

Each photo classification will:

- Use only relevant modules (e.g., Portraits may not need Geometry module)
- Apply different weightings to shared modules
- Have specific parameters within modules (e.g., Focus module looks for eyes in Portraits via Face Landmarks, infinity focus in Landscapes)

This modular approach allows for:

- Leveraging Apple's built-in Vision capabilities without custom model training
- Using proven open-source models where Vision APIs have gaps

- Simplified implementation through existing APIs
- Consistent and reliable assessment results

3. User Experience Features

- **Photo Import**: Access to Photos library, support for HEIC and JPEG
- **Assessment Display**: Score visualization, expandable feedback cards, composition overlay guides
- **Photo Library**: History of assessed photos with scores and feedback
- **Learning Center**: Tips for each photography rule with visual examples
- **Progress Tracking**: Improvement metrics over time

User Stories

1. **As a beginner photographer**, I want to understand why my photos look amateur so I can improve my skills.
2. **As a social media user**, I want quick feedback on my photos before posting to ensure they look professional.
3. **As a photography student**, I want to practice composition rules and receive immediate feedback.
4. **As a casual user**, I want a simple score that tells me if my photo is good without overwhelming technical details.

Non-Functional Requirements

Performance

- Assessment completion within 2 seconds per photo
- App size under 150MB including ML models
- Smooth UI with all interactions under 100ms response time
- Battery-efficient processing

Privacy & Security

- Complete on-device processing with zero network requests for photos
- No off-device photo data or metadata collection
- Encrypted local storage for assessment history
- Minimal photo library permissions (read-only)

Compatibility

- iOS 15.0 minimum (to leverage latest Neural Engine optimizations)
- iPhone 11 and newer (A13 Bionic chip minimum for ML performance)
- Support for images of all dimensions and orientations

Reliability

- 99.9% availability (fully offline capable)
- Consistent scoring (95% consistency for same photo)
- Graceful handling of unsupported formats
- No data loss for assessed photos

Technical Approach

AI/ML Strategy

- **Leverage Existing Open-Source Models**:
  - Image classification models (MobileNet, EfficientNet) for photo categorization
  - Object detection models (YOLO, SSD) for composition analysis
  - Face detection models for portrait assessment
  - Saliency detection for identifying focal points
  - Aesthetic assessment models (NIMA, BAID) for quality scoring

Core Technologies

- **Swift/SwiftUI** for native iOS development
- **Core ML** for running inference on open-source models
- **Vision Framework** for built-in image analysis (faces, horizons, saliency)
- **PhotoKit** for Photos library integration
- **Core Data** for local assessment history

Processing Pipeline

1. Image input and preprocessing
2. Photo type classification
3. Parallel assessment using multiple models
4. Rule-based scoring aggregation
5. Feedback generation based on detected issues

MVP Scope

Included in MVP

- Three photo categories (Portrait, Landscape, Street)
- 1-10 scoring system with detailed feedback
- Single photo synchronous assessment
- Assessment history and photo library
- Basic learning resources
- HEIC and JPEG format support

- Composition overlay guides

Post-MVP Features

- Real-time camera assessment
- Consented telemetry metrics
- Asynchronous photo processing
- Batch photo processing
- Cloud sync and backup
- Paywall features such as advanced editing suggestions
- RAW file support

Success Metrics

User Adoption

- 100,000 downloads in first 6 months
- 10,000 Daily Active Users within 3 months
- 10+ photos assessed per user weekly
- 40% retention at 30 days

Quality Metrics

- 4.5+ App Store rating
- 85% correlation with professional photographer assessments
- 60% of users engaging with learning content
- <2 second assessment time achievement

Technical Metrics

- <0.1% crash rate
- <5% battery drain per 100 assessments
- 95% assessment consistency
- Zero privacy incidents

Risk Assessment

Key Risks

1. **Model Accuracy**: Open-source models may not be photography-specific
   - *Mitigation*: Combine multiple models and use rule-based adjustments
2. **User Trust**: Skepticism about AI photography assessment
   - *Mitigation*: Transparency in scoring, educational content, clear limitations
3. **Performance on Older Devices**: ML inference speed concerns

- *Mitigation*: Model optimization, quality settings, device requirements

4. **Market Competition**: Existing photo editing apps adding similar features
    - *Mitigation*: Focus on education, privacy, and "Boyfriend Mode" brand

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Go-to-Market Strategy

Launch Approach

- Start with iOS-only release
- Focus on organic growth through photography communities
- Leverage "Instagram Boyfriend" meme for viral marketing
- Partner with photography educators and influencers

Target User Segments (Priority Order)

1. Photography beginners wanting to improve
2. Social media content creators
3. Photography students needing practice tools
4. Casual users wanting better vacation/family photos

Conclusion

Boyfriend Mode addresses a clear market need for accessible photography education through the innovative use of on-device AI. By combining existing open-source ML models with photography-specific rule sets, the app can deliver professional-quality feedback while maintaining complete user privacy. The focused MVP scope ensures a quality launch experience while the roadmap provides clear growth opportunities based on user feedback and market response.