Cursor AI Job Impact Calculator Implementation Prompts

Overview

Create an AI Job Impact Calculator based on Anthropic's research methodology from the Washington Post article, integrated as a lead magnet for the Mingus personal finance application targeting African American professionals.

Database Schema Prompt

Create a PostgreSQL database schema for an AI Job Impact Calculator with the following requirements:

1. **ai_job_assessments table:**
   - id (UUID, primary key)
   - user_id (UUID, foreign key to users table, nullable for anonymous assessments)
   - job_title (VARCHAR(255))
   - industry (VARCHAR(100))
   - experience_level (VARCHAR(20))
   - tasks_array (JSONB) // Selected daily tasks
   - remote_work_frequency (VARCHAR(20))
   - ai_usage_frequency (VARCHAR(20))
   - team_size (VARCHAR(20))
   - tech_skills_level (VARCHAR(20))
   - concerns_array (JSONB) // AI-related concerns
   - first_name (VARCHAR(100))
   - email (VARCHAR(255))
   - location (VARCHAR(100))
   - automation_score (INTEGER)
   - augmentation_score (INTEGER)
   - overall_risk_level (VARCHAR(20)) // 'low', 'medium', 'high'
   - assessment_type (VARCHAR(50)) DEFAULT 'ai_job_risk'
   - completed_at (TIMESTAMP)
   - created_at (TIMESTAMP DEFAULT NOW())

2. **ai_job_risk_data table:** (Static reference data)
   - id (UUID, primary key)
   - job_keyword (VARCHAR(100))
   - automation_base_score (INTEGER)
   - augmentation_base_score (INTEGER)
   - risk_category (VARCHAR(20))
   - industry_modifiers (JSONB)
   - created_at (TIMESTAMP DEFAULT NOW())

3. **ai_calculator_conversions table:**
   - id (UUID, primary key)
   - assessment_id (UUID, foreign key)
   - conversion_type (VARCHAR(50)) // 'email_signup', 'paid_upgrade'
   - conversion_value (DECIMAL(10,2))
   - converted_at (TIMESTAMP)

Include appropriate indexes for email, job_title, industry, and completed_at fields.

Backend API Endpoints Prompt

Create Flask API endpoints for the AI Job Impact Calculator with the following specifications:

1. **POST /api/ai-calculator/assess**
   - Accept form data from 5-step assessment
   - Validate all required fields (job_title, industry, experience, first_name, email)
   - Calculate automation/augmentation scores using this logic:
     * Base scores from job title matching (fuzzy matching for partial matches)
     * Industry modifiers: tech (+10 automation, +15 augmentation), healthcare (-10 automation, +5 augmentation)
     * Task-based adjustments: coding/writing/analysis tasks (+5 automation each)
     * Experience bonus: 10+ years (-5 automation, +10 augmentation)
     * AI usage bonus: frequent/daily users (-10 automation, +15 augmentation)
     * Tech skills bonus: high/expert level (-8 automation, +12 augmentation)
   - Ensure scores stay within 5-80 (automation) and 10-85 (augmentation)
   - Determine risk level: high (50+ total impact), medium (30-49), low (<30)
   - Save to database and return assessment results
   - Send welcome email via Resend integration
   - Return JSON with automation_score, augmentation_score, risk_level, recommendations

2. **GET /api/ai-calculator/job-search**
   - Query parameter: job_title
   - Return fuzzy search results from ai_job_risk_data table
   - Limit to 10 most relevant matches

3. **POST /api/ai-calculator/convert**
   - Track conversion events (email signup, paid upgrade)
   - Accept assessment_id, conversion_type, conversion_value
   - Save to ai_calculator_conversions table
   - Trigger Stripe checkout session for paid conversions

Use SQLAlchemy models, include proper error handling, rate limiting, and CSRF protection.

Frontend Components Prompt

Create React components for the AI Job Impact Calculator modal with these specifications:

1. **AICalculatorModal.tsx:**
   - 5-step progressive form with smooth transitions
   - Progress bar showing current step (1-5)
   - Form validation with real-time feedback
   - Responsive design for mobile and desktop
   - Tailwind CSS styling matching Mingus brand colors
   - Form sections:
     * Step 1: Job Information (title, industry, experience)
     * Step 2: Daily Tasks (checkbox grid of 8 task types)
     * Step 3: Work Environment (remote work, AI usage, team size)
     * Step 4: Skills & Concerns (tech skills, AI concerns checkboxes)
     * Step 5: Contact Info (name, email, location)

2. **AIResultsDisplay.tsx:**
   - Animated risk score display (percentage with color coding)
   - Automation vs Augmentation breakdown chart
   - Personalized recommendations list (4 items max)
   - Conversion offer with countdown timer (60 minutes)
   - Social proof elements and testimonial rotation
   - CTA button for $27 upgrade with Stripe integration

3. **AICalculatorTrigger.tsx:**
   - Button component to open calculator modal
   - Multiple design variants (primary, secondary, floating)
   - Analytics tracking on click
   - Integration with existing lead magnet buttons

Include TypeScript interfaces for all data structures, proper error boundaries, and accessibility features (ARIA labels, keyboard navigation).

Job Risk Calculation Engine Prompt

Create a sophisticated job risk calculation system based on the Anthropic study methodology:

1. **JobRiskCalculator.py:**

- Class with methods for score calculation
- Fuzzy string matching for job titles using fuzzywuzzy library
- Industry-specific modifiers based on BLS occupation categories
- Task-based risk assessment (map tasks to automation probability)
- Experience and skill level adjustments
- Generate personalized recommendations based on risk profile

2. **Risk Data Population:**
- Create seed data for 100+ common job titles with base automation/augmentation scores
- Include these high-risk jobs: Software Developer (65/35), Translator (75/25), Content Writer (60/35)
- Include these medium-risk jobs: Marketing Manager (35/50), Financial Analyst (45/45)
- Include these low-risk jobs: Teacher (15/60), Therapist (5/45), Consultant (20/58)
- Add industry modifiers for all 10 industries in the form

3. **Recommendation Generator:**
- High risk: Focus on AI collaboration, strategic thinking, transition planning
- Medium risk: AI tool adoption, human judgment skills, bridge roles
- Low risk: AI leverage for productivity, leadership in AI adoption
- Personalize based on current AI usage, tech skills, and stated concerns

Include comprehensive logging and the ability to A/B test different scoring algorithms.

Integration with Existing Mingus System Prompt

Integrate the AI Calculator with the existing Mingus application:

1. **User Profile Integration:**
- Link ai_job_assessments to existing users table via user_id
- Add new fields to user profile for job risk data
- Update user onboarding flow to include optional AI assessment
- Sync calculator data with existing 25+ user profile fields

2. **Landing Page Integration:**
- Add AI Calculator as 4th lead magnet option alongside existing three
- Update hero section with AI-focused value propositions
- Modify conversion funnel to handle AI calculator leads
- A/B test different positioning strategies

3. **Email Marketing Integration:**
- Create dedicated email sequence for AI calculator leads
- Segment users by risk level (high/medium/low) for targeted messaging
- Include industry-specific content for different job categories
- Set up automated follow-ups based on conversion status

4. **Analytics Integration:**
   - Track calculator completion rates by traffic source
   - Monitor conversion rates from assessment to paid plans
   - Segment analysis by demographic (age, location, income level)
   - A/B test different risk calculation algorithms

5. **Payment Integration:**
   - Create new Stripe product for "AI-Proof Career Plan" at $27
   - Generate PDF reports using existing report generation system
   - Update subscription tiers to include AI career insights
   - Track revenue attribution to AI calculator leads

Maintain existing Flask-SQLAlchemy patterns and ensure backwards compatibility.

Lead Magnet Landing Page Updates Prompt

Update the Mingus landing page to feature the AI Job Impact Calculator:

1. **Hero Section Updates:**
   - Add "Will AI Replace Your Job?" headline option
   - Include social proof: "12,847+ professionals assessed this month"
   - Add urgency: "Featured in Washington Post analysis"
   - A/B test AI-focused vs. general financial wellness messaging

2. **Lead Magnet Grid Update:**
   - Redesign 4-option grid layout:
     * AI Job Risk Calculator (new)
     * Relationship Impact Calculator
     * Tax Bill Impact Calculator
     * Income Comparison Tool
   - Add trending badges and completion time estimates
   - Include preview of sample results for each tool

3. **Value Proposition Updates:**
   - Target African American professionals facing AI disruption
   - Connect job security to financial wellness planning
   - Highlight career advancement and income protection
   - Add testimonials from professionals who used AI insights

4. **Mobile-First Design:**
   - Optimize calculator flow for mobile completion
   - Reduce friction in form fields and navigation

- Fast loading with progressive enhancement
- Touch-friendly interface elements

5. **Conversion Optimization:**
- Add exit-intent popups with calculator offer
- Implement progressive profiling across lead magnets
- Create retargeting campaigns for incomplete assessments
- Test different call-to-action copy and colors

Include proper SEO optimization for AI job security keywords and ensure fast page load speeds.

Analytics and Tracking Prompt

Implement comprehensive analytics for the AI Job Impact Calculator:

1. **Google Analytics 4 Events:**
- ai_calculator_opened (source, medium, campaign)
- calculator_step_completed (step_number, time_on_step)
- assessment_submitted (job_title, industry, risk_level)
- conversion_offer_viewed (risk_level, time_to_view)
- paid_upgrade_clicked (risk_level, assessment_completion_time)

2. **Custom Analytics Dashboard:**
- Calculator completion funnel by step
- Conversion rates by risk level and demographic
- Revenue attribution to calculator traffic
- Popular job titles and industries assessed
- Geographic distribution of assessments

3. **A/B Testing Framework:**
- Test different risk calculation algorithms
- Compare conversion offer positioning and pricing
- Test recommendation personalization strategies
- Experiment with urgency messaging and timers

4. **Performance Monitoring:**
- Calculator load times and error rates
- Database query performance for risk calculations
- Email delivery rates and open rates for follow-ups
- Payment processing success rates

5. **Business Intelligence:**
- Weekly reports on calculator performance

- Cohort analysis of calculator users vs. other lead sources
- Lifetime value analysis of AI calculator leads
- Market intelligence on job sectors most concerned about AI

Use existing monitoring stack (StatsD, Grafana) and integrate with business reporting systems.

Email Marketing Automation Prompt

Create email marketing automation for AI Calculator leads:

1. **Welcome Email Series (5 emails over 14 days):**
   - Email 1 (Immediate): Assessment results PDF + next steps
   - Email 2 (Day 2): Industry-specific AI trends and career advice
   - Email 3 (Day 5): Success stories from professionals in similar roles
   - Email 4 (Day 8): Advanced AI career planning strategies
   - Email 5 (Day 14): Exclusive offer for complete career intelligence report

2. **Segmented Messaging by Risk Level:**
   - High Risk: Focus on urgent career transition planning
   - Medium Risk: Emphasize skill development and AI collaboration
   - Low Risk: Position as AI advantage and productivity optimization

3. **Industry-Specific Content:**
   - Technology workers: AI coding tools and career pivots
   - Finance professionals: Fintech disruption and adaptation
   - Healthcare: AI augmentation vs. human care value
   - Education: EdTech integration and teaching evolution

4. **Behavioral Triggers:**
   - Re-engagement for incomplete assessments
   - Upgrade offers based on email engagement
   - Referral requests for satisfied users
   - Survey invitations for feedback and testimonials

5. **Integration with Existing Systems:**
   - Use Resend for email delivery
   - Connect to existing user segmentation system
   - Maintain brand consistency with current email templates
   - Include unsubscribe and preference management

Include detailed email copy, subject line variations for A/B testing, and automated behavioral triggers.

Security and Privacy Prompt

Implement security and privacy measures for the AI Calculator:

1. **Data Protection:**
   - Encrypt PII in ai_job_assessments table
   - Implement data retention policies (delete after 2 years)
   - GDPR compliance with explicit consent checkboxes
   - Right to deletion and data export functionality

2. **API Security:**
   - Rate limiting: 5 assessments per hour per IP
   - CSRF protection on all form submissions
   - Input validation and sanitization
   - SQL injection prevention with parameterized queries

3. **Privacy Controls:**
   - Anonymous assessment option (without email)
   - Clear privacy policy updates for AI data usage
   - Opt-out mechanisms for marketing communications
   - Data processing transparency and user control

4. **Audit Logging:**
   - Log all assessment submissions and modifications
   - Track access to sensitive user data
   - Monitor for suspicious patterns or abuse
   - Regular security audit reports

5. **Compliance:**
   - CCPA compliance for California users
   - Industry-standard encryption for data at rest and in transit
   - Regular vulnerability assessments
   - Staff training on data handling procedures

Use existing security infrastructure and maintain consistency with current Mingus privacy practices.

Performance Optimization Prompt

Optimize the AI Calculator for performance and scalability:

1. **Database Optimization:**
   - Index strategy for fast job title lookups

- Query optimization for assessment submissions
- Connection pooling configuration
- Read replica usage for analytics queries

2. **Frontend Performance:**
- Lazy loading for modal components
- Progressive form submission with client-side validation
- Image optimization and CDN usage
- Bundle splitting for faster initial load

3. **Caching Strategy:**
- Redis caching for job risk data lookups
- Browser caching for static assessment resources
- CDN caching for images and assets
- Database query result caching

4. **Scalability Planning:**
- Async processing for non-critical tasks (emails, analytics)
- Load balancing configuration for high traffic
- Database sharding strategy if needed
- Monitoring and alerting for performance degradation

5. **Mobile Optimization:**
- Touch-optimized interface elements
- Reduced data usage for mobile users
- Progressive web app capabilities
- Offline assessment completion with sync

Target: <2 second load time, <500ms assessment submission, 99.9% uptime during peak traffic.

Testing and Quality Assurance Prompt

Create comprehensive testing for the AI Calculator:

1. **Unit Tests:**
- JobRiskCalculator class methods
- Scoring algorithm edge cases
- Database model validations
- Email sending functionality

2. **Integration Tests:**
- End-to-end assessment flow
- Payment processing integration

- Email automation triggers
- Analytics event tracking

3. **Frontend Testing:**
   - React component rendering
   - Form validation and submission
   - Modal interactions and navigation
   - Responsive design across devices

4. **Performance Testing:**
   - Load testing for concurrent assessments
   - Database performance under heavy load
   - Email delivery rate testing
   - CDN and caching effectiveness

5. **User Acceptance Testing:**
   - Complete assessment flow testing
   - Cross-browser compatibility
   - Accessibility compliance verification
   - Mobile device testing

6. **A/B Testing Framework:**
   - Statistical significance calculations
   - Test isolation and proper randomization
   - Results tracking and analysis tools
   - Automated winner selection and deployment

Include test data fixtures, mock services, and automated CI/CD integration with existing testing infrastructure.