

# Coverfolio

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## COMPSCI 520 - Project Proposal

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# Project Objective

Our project is a web application that transforms resumes (PDF, Word, or LinkedIn) into customizable portfolio websites and professional cover letters. It aims to simplify the process of showcasing skills, experiences, and projects by providing AI-powered rewriting, personalized templates, and recruiter-friendly sharing tools.

# Motivation

Many job seekers struggle to present their achievements effectively and tailor their applications to different roles. Traditional resumes are static, hard to personalize, and often fail to capture attention in competitive markets. This project addresses that gap by offering an AI-enhanced portfolio and cover letter generator that evolves with user prompts, making it easier for candidates to stand out, track recruiter engagement, and continuously refine their professional story.

# High-level features

## 1. Authentication & User Profiles

- User login and registration

## 2. Portfolio & Cover Letter Generation

- Portfolio generator: with 4-5 customizable UI templates
- Cover letter generator: form-based input (company, role, activities) - AI-generated letters

## 3. Resume & Data Ingestion

- 2 forms of input:
  - a. Upload resume or LinkedIn export of profile (PDF, Word)
  - b. Accept form-based input from user (About, Extra-curricular, etc.)
- Auto-parse sections (Skills, Education, Experience, Projects)
- Editable synced portfolio (if resume updates, portfolio updates)

# High-level features (contd.)

## **4. AI-Powered Enhancements**

- Enhance/Rewrite parsed sections
- Suggest additional skills
- Auto-generate project pitches

## **5. Chatbot-style guidance**

- For improvements and editing portfolio

## **6. Interaction & Communication**

- Contact form (email) embedded in portfolio
- Recruiter-friendly links for easy sharing

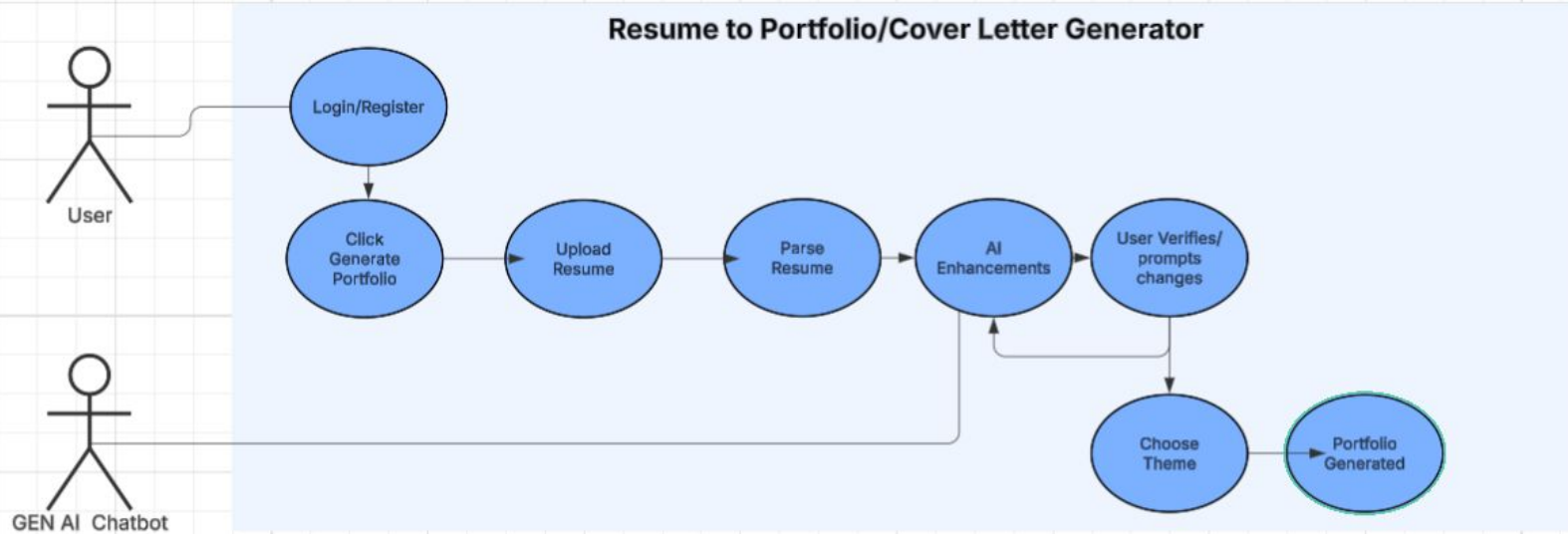
# High-level features (contd.)

## **7. Analytics & Insights**

- Track views and downloads
- Optional event tracking (e.g., clicks, time spent)

## **8. Hosting the portfolio and make cover letter downloadable**

# Use Case Diagram 1 and 2 - Portfolio Generation

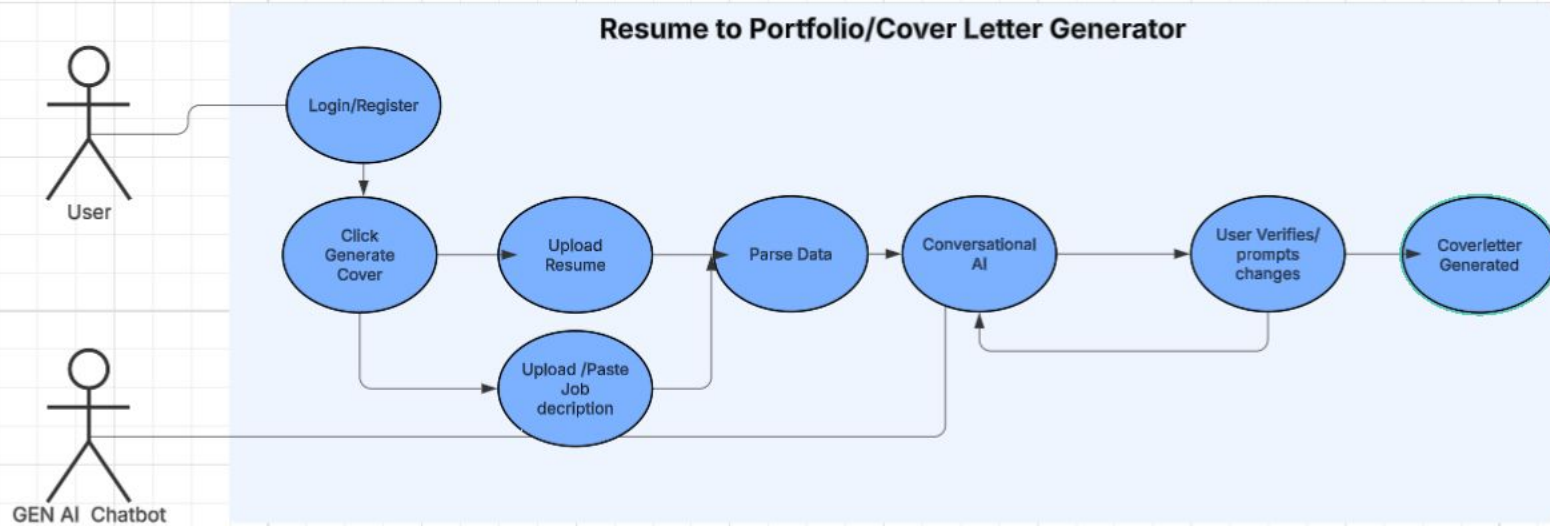


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|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Use Case UC - #1</b> | <b>Upload Resume and Parse</b>                                                                                                                                                                                                                                                                                                                                   |
| Related Requirements    | Upload resume or LinkedIn export of profile (PDF, Word)                                                                                                                                                                                                                                                                                                          |
| Preconditions           | User is registered and logged in                                                                                                                                                                                                                                                                                                                                 |
| Main Flow (success)     | <p>-&gt; 1. User chooses Upload Resume and provides PDF/Word/LinkedIn export.</p> <p>&lt;- 2. Parsing worker normalizes sections (About, Skills, Education, Experience, Projects) and produces a typed payload.</p> <p>&lt;- 3. Backend saves parsed data and returns preview to user for verification.</p> <p>-&gt; 4. User accepts or edits parsed fields.</p> |
| Alternative Flows       | Parsing fails → show error + request re-upload or manual entry.                                                                                                                                                                                                                                                                                                  |
| Postconditions          | Typed profile exists in DB and is available for portfolio generation.                                                                                                                                                                                                                                                                                            |



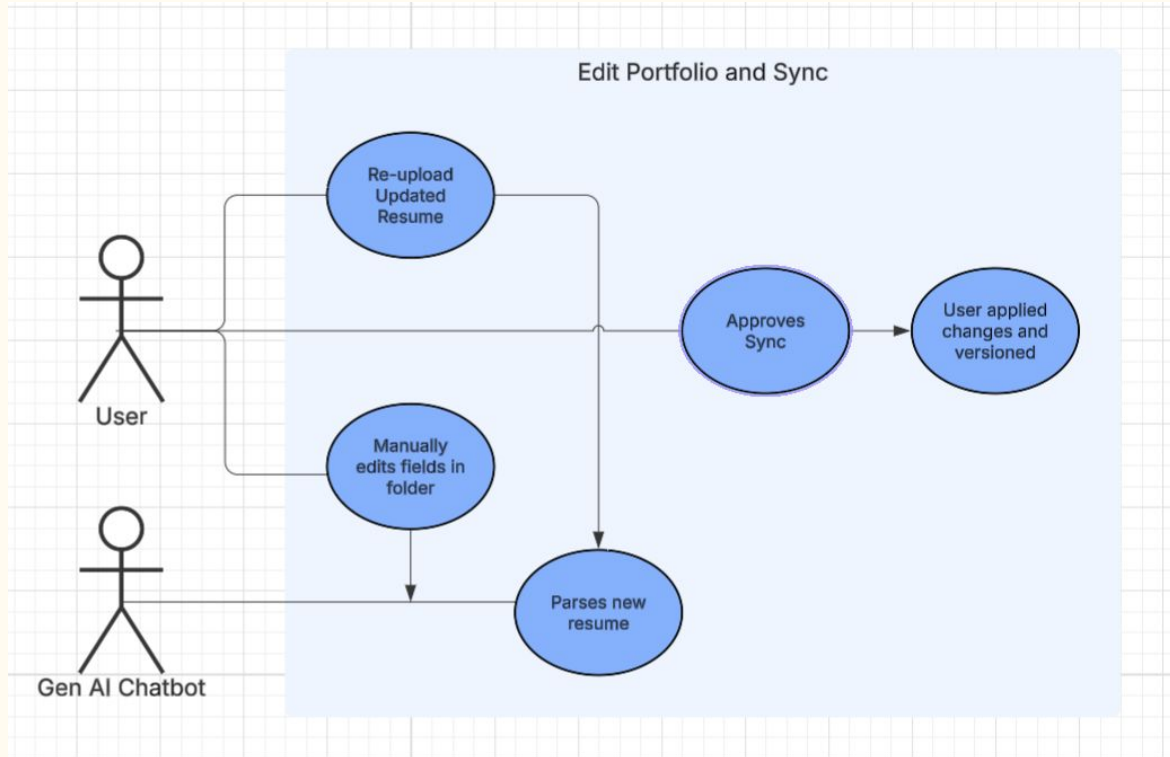
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| <b>Use Case UC - #2</b>              | <b>Parsed Resume to Portfolio</b>                                                                                                                                                                                                                                                                                                                                                                                           |
| Related Requirements                 | Upload resume or LinkedIn export of profile (PDF, Word)                                                                                                                                                                                                                                                                                                                                                                     |
| Initiating Actor                     | User                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Actor's Goal                         | Generate static portfolio website                                                                                                                                                                                                                                                                                                                                                                                           |
| Participating Actors                 | Gen AI                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Preconditions                        | Registered User                                                                                                                                                                                                                                                                                                                                                                                                             |
| Postconditions                       | Portfolio is generated                                                                                                                                                                                                                                                                                                                                                                                                      |
| Flow of events Main Success Scenario | -> 1. Registered User uploads Resume/LinkedIn<br><- 2. Profile is parsed, bullets are converted to crisp summaries using participating actor Gen AI's help and details with suggestions and verified by user<br>-> 3. User edits and approves the content to go on portfolio<br><- 4. System suggests themes for user to select<br>-> 5. User select themes for portfolio<br><- 6. System generates portfolio ready to host |

# Use Case Diagram 3 - Cover Letter Generation



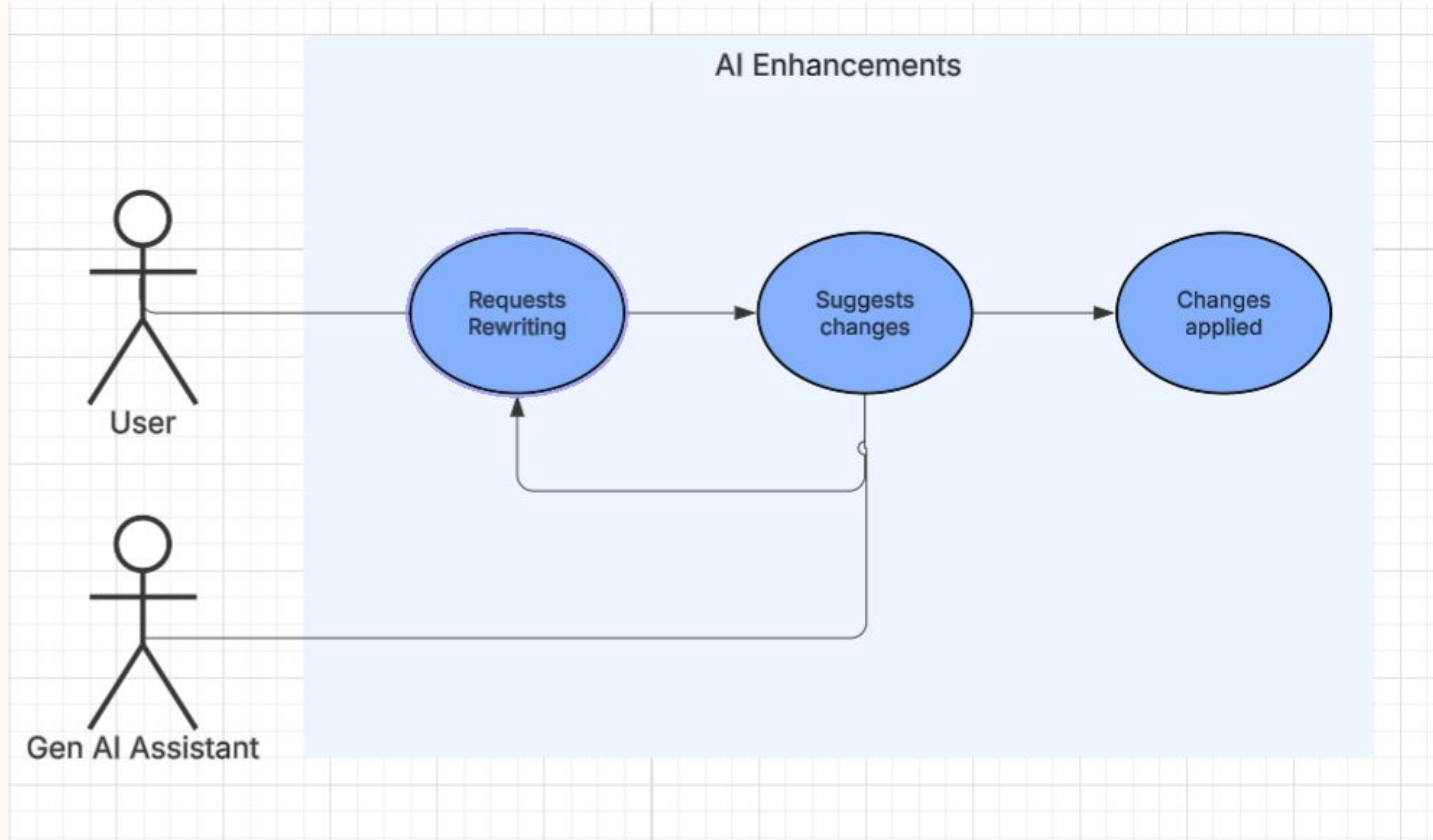
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| <b>Use Case UC - #3</b>              | <b>Resume to Cover Letter with Job Description</b>                                                                                                                                                                                                                                         |
| Related Requirements                 | Resume and Job Description                                                                                                                                                                                                                                                                 |
| Initiating Actor                     | User                                                                                                                                                                                                                                                                                       |
| Actor's Goal                         | Cover Letter Generation                                                                                                                                                                                                                                                                    |
| Participating Actors                 | User, Gen AI                                                                                                                                                                                                                                                                               |
| Preconditions                        | Registered User, User has profile or uploads resume; and provides job/company details in form.                                                                                                                                                                                             |
| Postconditions                       | Cover letter saved and downloadable.                                                                                                                                                                                                                                                       |
| Flow of events Main Success Scenario | -> 1. User enters Resume and fills form (company, role, job description, target project, extracurriculars).<br><- 2. System uses participating actor LLM/GenAI to generate a tailored context relevant instruct based cover letter<br>-> 3. User can edit and download final letter (PDF). |

# Use Case Diagram 4 - Edit Portfolio and sync on re-upload



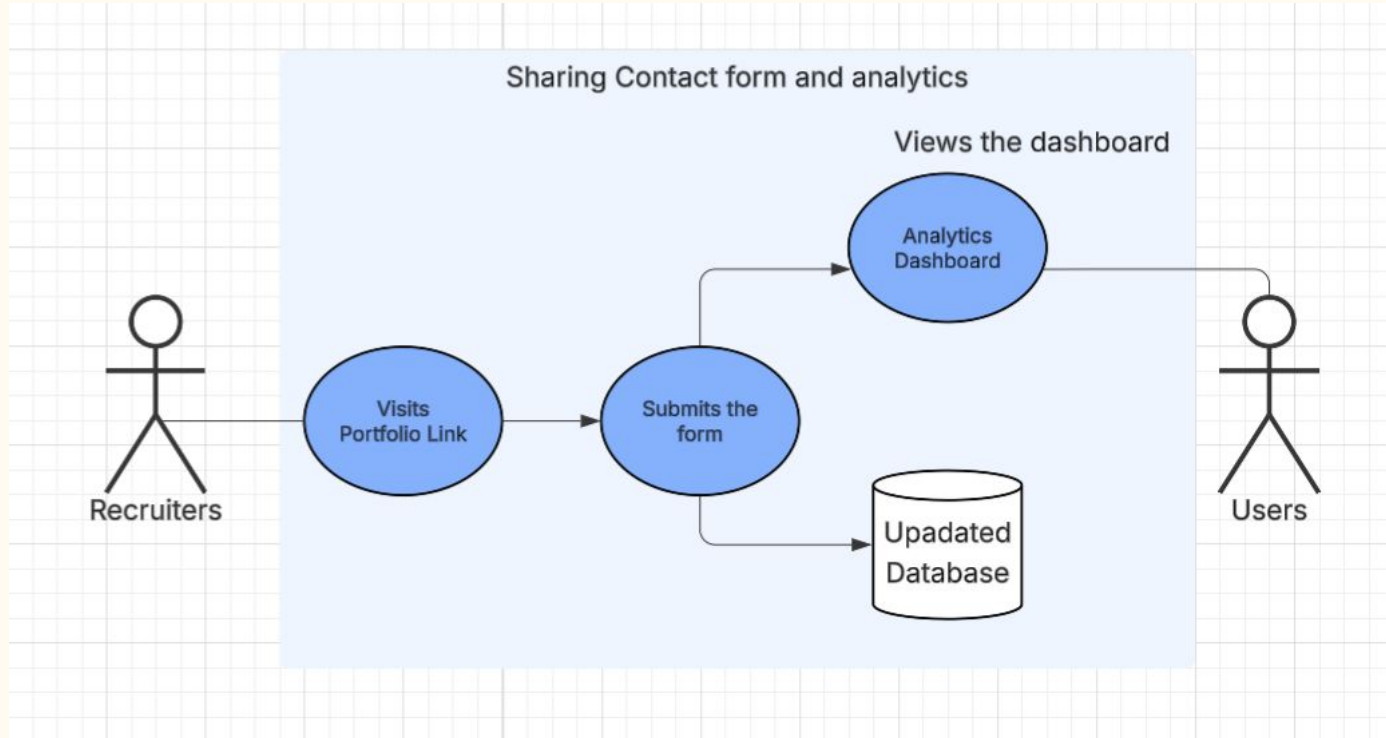
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| <b>Use Case UC - #4</b> | <b>Edit Portfolio &amp; Sync on Re-upload</b>                                                                                                                                       |
| Actors                  | User, Parsing Service                                                                                                                                                               |
| Preconditions           | Portfolio exists.                                                                                                                                                                   |
| Main Flow (success)     | -> 1. User re-uploads an updated resume<br><- 2. System parses new resume and highlights changed fields<br>-> 3. User approves sync; changes are applied to portfolio and versioned |
| Postconditions          | Portfolio updated                                                                                                                                                                   |

## Use Case 5 : AI Enhancements and Chatbot Guidance



|                              |                                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Use Case UC - #5</b>      | <b>AI Enhancements &amp; Chatbot Guidance</b>                                                                                                                      |
| Actors                       | User, GenAI/LLM                                                                                                                                                    |
| Preconditions                | Generated/existing Portfolio/Cover letter                                                                                                                          |
| Postconditions               | Portfolio/Cover letter content updated                                                                                                                             |
| Main Flow (Success scenario) | <p>-&gt; 1. User opens the AI assistant; requests rewriting or skill suggestions.</p> <p>&lt;- 2. GenAI returns suggestions, user reviews and applies changes.</p> |

# Use Case Diagram 6 - Sharing, Contact Form & Analytics





|                              |                                                                                                                                                                                                                                                                                                              |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Use Case UC - #6</b>      | <b>Sharing, Contact Form &amp; Analytics</b>                                                                                                                                                                                                                                                                 |
| Actors                       | Recruiter (external visitor), User, Analytics Service                                                                                                                                                                                                                                                        |
| Preconditions                | Portfolio published                                                                                                                                                                                                                                                                                          |
| Postconditions               | Events persisted; analytics view updated.                                                                                                                                                                                                                                                                    |
| Main Flow (Success scenario) | <ul style="list-style-type: none"><li>-&gt; 1. Recruiter visits portfolio link and may submit contact form</li><li>&lt;- 2. System logs view/download events (optionally to Kafka), increments counters in DB/Redis.</li><li>-&gt; 3. User views analytics dashboard with counts and time windows.</li></ul> |

# Feasibility and Scope

The project will be developed using

- **Frontend:** React, TypeScript, and Tailwind
- **Backend data persistence:** Django GraphQL APIs and Postgres
- **Resume ingestion:** handled by a Node.js + TypeScript parsing service
- **AI enhancements:** powered by LangChain with LLM integration
- **Redis:** supports caching

All team members have prior experience in web development, databases, and AI/ML frameworks, making the technical requirements achievable in 12 weeks.

# Preliminary Timeline and Work Distribution

- **Week 1–2:** Finalize system design and architecture, set up project repo, database schema. (All)
- **Week 3–4:** Implement user authentication and registration (backend - Lavanika, Rahasya; frontend - Somya, Shreyaa).
- **Week 5–6:** Develop resume upload and parsing service (PDF/Word) and integrate with backend.(Anisha, Lavanika)
- **Week 7–8:** Build portfolio generator with customizable templates; implement AI assistant for resume rewriting and skill suggestions. (Shreyaa, Somya)
- **Week 9–10:** Add cover letter generator, recruiter view/download analytics, and chatbot-style portfolio updates.(Rahasya, Anisha)
- **Week 11:** Conduct testing, bug fixing across services. (All)
- **Week 12:** Finalize deployment, prepare demo portfolios, and complete final presentation. (All)