

UCLA Psych 186B Project Evaluation Rubric (25 Points Total)

Prof. Zili Liu

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Preamble

This rubric represents an ideal framework designed to encourage student creativity and self-motivation. We recognize that:

- Students are allowed to use any existing models for their final projects. They just need to cite properly to give due credits, and clearly explain what their new contributions are, on top of the existing models
- This is an introductory course where lectures necessarily focus on neural network fundamentals due to time constraints and technical complexity
- The final project provides an open opportunity for students to explore and take risks in modeling and applications beyond what the course can cover
- When using open-source neural network models, full understanding of every implementation detail may not be feasible or expected
- Students are encouraged to be ambitious and innovative in their project choices
- Innovation and genuine effort to understand one's chosen topic are valued highly
- Grades will be curved for the benefit of the entire class
- The goal is to foster learning and curiosity, not to achieve perfection

The following criteria should be viewed as guidelines rather than strict requirements, while maintaining high standards for intellectual engagement with the material.

1 Presentation (10 points)

1.1 Format Requirements

Strict 12-minute presentation + 3-minute Q&A

- This format mirrors the typical presentation structure at international conferences
- Adhering to these time limits provides valuable practice for future academic and professional presentations
- Learning to present complex technical work clearly and concisely within time constraints is an essential professional skill

1.2 Data Visualization Guidelines

Prefer graphs over tables when possible

- Graphs often communicate trends and relationships more effectively
- Always clearly explain x- and y-axes labels and units
- Include error bars whenever possible to show statistical reliability
- Use clear, readable fonts and appropriate figure size
- Tables should be reserved for specific numeric values that need precise reporting
- All figures should support your narrative and be clearly explained

1.3 Required Content

Must address all of the following points in order:

1. What is the problem?
2. Why is it interesting?
3. What has been done in the literature?
4. What have you done, in detail?
5. What is your result?
6. How can we understand your result?
7. Your conclusions

1.4 Grading Criteria

Outstanding (9-10 points)

- Follows all presentation requirements precisely
- Exceptionally clear and engaging delivery
- Professional-quality slides/materials
- Effective use of visualizations and examples
- Handles Q&A thoughtfully and knowledgeably
- Perfect time management
- Demonstrates command of material
- Clearly explains model complexity and design choices

Competent (7-8 points)

- Follows most presentation requirements

- Clear delivery
- Well-organized materials
- Uses helpful visualizations
- Answers questions adequately
- Minor timing issues
- Shows good grasp of material
- Explains most model choices

Needs Improvement (0-6 points)

- Missing key presentation requirements
- Unclear delivery
- Poorly structured materials
- Few/poor visualizations
- Struggles with questions
- Significant timing issues
- Limited command of material
- Poor explanation of model choices

2 Written Report Requirements

- Length: Approximately 6 pages
- Format: Standard academic format
 - Double-spaced
 - 12-point font
 - 1-inch margins
 - Page numbers
 - References in any consistent academic style
- Must follow the same structure as the presentation (7 sections)
- Code and detailed results should be included in appendices (not counted in page limit)

3 Understanding and Analysis (8 points)

3.1 Outstanding (7-8 points)

- Demonstrates deep understanding of model architecture and behavior
- Provides insightful analysis of both successes and failures
- Makes clear connections between theory and implementation
- Shows evidence of systematic investigation of model behavior
- Explains why specific architectural choices were made
- Identifies and analyzes limitations thoughtfully
- Presents clear objective evaluation metrics and comparisons
- Demonstrates understanding of model's practical significance

3.2 Competent (5-6 points)

- Shows good understanding of model fundamentals
- Analyzes results adequately
- Makes some connections to theory
- Tests model behavior systematically
- Explains most architectural choices
- Identifies limitations

3.3 Needs Improvement (0-4 points)

- Shows surface-level understanding only
- Minimal analysis of results
- Few connections to theory
- Limited testing of model behavior
- Architectural choices not well explained
- Few limitations identified

4 Innovation and Model Complexity (4 points)

4.1 Outstanding (4 points)

- Project uses advanced nonlinear architectures appropriately
- Tackles challenging problems beyond homework complexity
- Shows creative problem-solving and original thinking
- Model complexity matches problem difficulty appropriately

4.2 Competent (2-3 points)

- Uses nonlinear architectures
- Extends beyond homework difficulty
- Shows some creativity
- Model complexity is adequate for problem

4.3 Needs Improvement (0-1 points)

- Uses overly simple architectures
- Similar to homework difficulty
- Limited creativity shown
- Model complexity insufficient for problem

5 Technical Execution (3 points)

5.1 Outstanding (3 points)

- Code is well-organized and documented
- Implementation is efficient
- Appropriate testing methodology
- Thorough experimental design
- Results clearly presented
- Reproducible methodology

5.2 Competent (2 points)

- Code is organized
- Implementation works correctly
- Basic testing conducted
- Reasonable experimental design
- Results presented adequately

5.3 Needs Improvement (0-1 points)

- Code is disorganized
- Implementation has issues
- Limited testing
- Poor experimental design
- Results unclear

6 Professional Evaluation Standards

- Projects must include objective evaluation metrics (e.g., accuracy scores, error rates)
- Be prepared to include this project on your resume
- Be ready to answer interviewer questions such as:
 - “How good is this model?”
 - “How can I evaluate it?”
 - “How does it compare with other models?”
- Use standard metrics when possible for comparison with published results
- Include baseline comparisons where appropriate
- Document your evaluation methodology clearly
- Discuss limitations and potential improvements objectively