

Pioneer Research Program Evaluation Form

Scholar Information

Scholar Name: First/Given Name: Guang

Last/Family Name: Yang

Scholar's Research Concentration at Pioneer: Your Number One - mathematics of ranking

Title of Scholar's Research Paper: An Analysis of the Codeforces Rating System

Grading and Academic Oversight Section

Program grade conferred by professor: A

**Full grading rubric approved by Pioneer Academics and Oberlin College*

The Pioneer Research Program's college accreditation and academic oversight are conducted collaboratively with Oberlin College:

Listing on Common Application:	"Summer Program, Credit Awarded Directly by Oberlin College"
Course Title on Coalition Application:	"099" "Pioneer Research Course"
College Course ID on UC Application:	"INST 099" "Pioneer Research Course"

Comprehensive Evaluation Section

Evaluator Name & Full Title: Timothy Chartier, Joseph R. Morton Professor of Mathematics and Computer Science

College/University & Department: Mathematics and Computer Science, Davidson College

Full Educational Background of Evaluator:

B.S., 1993, Western Michigan University

M.S., 1996, Western Michigan University

Ph.D., 2001, University of Colorado at Boulder

Please briefly explain the nature and requirements of the research paper and your interaction with the scholar:

Guang and I met for 5 group sessions with the other 5 scholars in the research group. Each session touched on a new area of ranking. The scholars would work with ranking code in python, apply the

ranking, interpret the ratings, and read articles in the field. Guang offered accurate and insightful homework. He asked clarifying questions foreshadowing the care he'd have in his coming research.

When we began our five one-on-one research meetings, Guang posed a question regarding the development of a variant of Elo ranking for ranking participants in Codeforce programming competitions. From early in the process, Guang asked research questions that would offer important insight. Guang came to every session with very clear questions in mind. He was eager to learn the research process and made important discoveries in his work given that interest. Most notable in Guang's work was his ability to search research literature for insight on the inevitable hurdles research poses. At many stages, Guang made significant strides via his work, insight, and ability to understand research and adapt what he read to his work.

Please rate the scholar in the following areas:

	Excellent	Good	Average	Below Average	Poor
Ability to form original ideas and concepts	X				
Ability to communicate thoughts in an effective and articulate manner	X				
Ability to synthesize and organize information from disparate sources	X				
Level of scholar's curiosity, aptitude and industriousness	X				

Based on the scholar's performance through Pioneer, how would you rate this scholar's potential for undergraduate level academic work at a top college/university?

One of the best I have encountered, top 5% <u>X</u>	Excellent, top 10% <u> </u>
Very Good, top 25% <u> </u>	Good, top 50% <u> </u>
Below Average <u> </u>	

Describe some of the scholar's strengths:

Guang clearly enjoys learning. He was very interested in learning how to organize and conduct rigorous research. He was very engaged in writing his research. Every Pioneer scholar is interested. Guang, however, was always eager to learn and quick to integrate new things into his work. Guang has strong computer science and mathematical abilities. His research required significant coding. Just getting the data for his research required careful planning and data management. In his paper, Guang carefully

designed his ranking method. He even proved his reasoning for one step via a mathematical proof. Guang is a strong researcher and an eager learner in the classroom of research. I enjoyed collaborating with him.

Describe some areas in which the scholar can improve:

Guang will enjoy expanding his experience in research in college. College will inherently also broaden his skillset enabling him to ask even broader and deeper questions.

While the second half of the research work was one-to-one with the professor, the first half involved a small research cohort of 3-6 scholars. Describe the contribution that the scholar made to the research group discussion and learning:

Guang listened actively and asked insightful questions that benefited the group. His homework was strong and of high quality, as well.

Would you recommend this scholar to a college admissions officer at a top college or university? Why or why not?

Yes. Guang is an eager learner. I also simply enjoy working with him. He makes independent contributions. Guang will, quite simply, dive into the college classroom and his learning. He's organized about his learning and will enjoy learning and applying what he's learned outside the classroom. He will also engage academically beyond the classroom and enjoy the college community.

Evaluator name (signed):



Evaluator name (printed): Tim Chartier

Date: September 15, 2021

Evaluator contact details (email and phone): tichartier@davidson.edu, 704-894-2838

Pioneer Academics affirms that the scholar whose research paper is attached has followed Pioneer Academics' protocols for developing original research and that their paper has met Pioneer Academics' standards for authenticity. The grading and evaluation have met the standards collaboratively defined by Pioneer Academics and Oberlin College & Conservatory. If there are any questions regarding the work's academic integrity, please contact us at academic.integrity@pioneeracademics.com or by calling (855) 572-8863. We will conduct an immediate review and respond to your questions promptly.