

Matthew Nelson

(818) 689-3852 | Lake View Terrace, CA

[LinkedIn](#) | matthewmznelson3@gmail.com | [Website](#)



ABSTRACT

Matthew Nelson is a recent University of California Berkeley alumnus. Over the course of his academic career, Matthew pursued a simultaneous degree in Mechanical Engineering & Theater and Performance Studies. Matthew marries his fields in technical storytelling, designing themed attractions and animated platforms that visually and kinesthetically engage audiences. In conjunction with his studies, Matthew is passionate about scholarship. He served as a Deep Learning Fellow at MIT, where he collaborated with peers to design appliances that use object detection algorithms to mitigate food waste. He served as a Coleman Fung Engineering Fellow, where he designed human-centered prototypes to improve the nutritional & social wellbeing of middle schoolers and senior citizens. As a Ronald E. McNair Scholar under Dr. Baoxia Mi, Matthew served as a researcher in solar desalination, working to progress the development of biosynthetic leaf filtration and biomimetic condensation interfaces in order to mitigate global & domestic water shortages.

Matthew's expertise in humanistic research established his position in the College of Engineering's department of Community Engagement & Inclusive Practices. As a researcher & graphic designer for the EMPOWER Program, Matthew worked with Dr. Fatima Alleyne to develop presentations, books & digital libraries in the field of mentorship, advancing faculty pedagogy & the quality of their relationships with students. Along with his devotion to the field of science and research, Matthew aims to expand his scholarship in the field of theater performance. This summer, he will develop his skills as a Theatermakers Fellow at the two-time Tony Award winning Eugene O'Neill Theater Center. Afterwards, Matthew will begin work as an Imagineer with Disney Live Entertainment, continuing to craft immersive stories that exist at the matrimony of engineering & theater.

EDUCATION

University of California Berkeley, College of Engineering

Berkeley, CA

Major: Mechanical Engineering, Bachelor of Science

May 2022

Major: Theater and Performance Studies, Bachelor of Arts

RELEVANT QUALIFICATIONS

<u>Prototyping & Design</u>	<u>User-Research</u>	<u>Software Proficiency</u>	<u>Office Management</u>
Maya Animation 2020, AutoCAD 2D Modeling, SolidWorks 3D Modeling, Adobe Suite (Portfolio, Premiere Pro, Illustrator, Photoshop), Figma, Canva Graphic Design, Camtasia, Sketch Artistry, Storyboard & Animatic Design	Human-centered Design, User-group Outreach, Rapid Prototyping, Journey Mapping, Benchmark Testing, Qualitative Usability Testing, Persona Building, Task Management (Trello, Kanban), Survey Design, Zotero, EndNote	Machine Learning (CNNs, Image Processing, Recommender Systems, Voice Recognition, Object Detection), MATLAB Data Analysis, C++, Python, SolidWorks FEA Simulation, Xcode iOS IDE, Arduino IDE, PCB Design, GitHub, Google Colaboratory	Microsoft (Excel, Word, PowerPoint, Outlook & Teams), Google Suite, SharePoint, OneDrive

WORK EXPERIENCE

Berkeley College of Engineering

Berkeley, CA

Diversity Equity & Inclusion Research Assistant IV, Creative Content Manager

March 2021 – July 2022

- Conducted expansive literature review in the fields of faculty mentoring practices, pedagogical reflexivity & relationship building
- Designed a 74-page digital library of synthesized literature as a primary resource for faculty development in mentoring pedagogy
- Synthesized a digital library of 26 research articles as a primary resource for faculty mentoring pedagogy & hiring practices
- Generated 14 psychosocial-political resources for faculty to navigate relationships with students of BIPOC & minority identities
- Researched & organized a multiracial multi-medium knowledge forum designed to challenge monolithic mentoring approaches

Residential & Student Services Program*Resident Advisor, University of California Berkeley*

Berkeley, CA

August 2017 – May 2022

- Initiated bi-monthly residential events designed to enhance the transition, assimilation & retention of 1600+ undergraduates
- Imparted detailed, tailored paraprofessional academic & career-oriented advising in frenetic competitive environments
- Navigated delicate communications between students & conduct authorities in situations of substance abuse and suicidal ideation
- Spearheaded fundraising and collaborative data management strategies for residential events with UC Berkeley organizations

South Coast Engineering Group, Inc.*AutoCAD Draftsman*

Calabasas, CA

June 2020 – August 2020

- Enhanced technical skills in computer-aided design using AutoCAD & Revit 2021
- Detailed intricate 2D & 3D animated orchestrations of mechanical, electrical & plumbing (MEP) designs for interior constructions
- Established communication channels between architect and engineers on MEP interferences to streamline design renovations
- Animated 2D seismic bracing on suspended piping systems to showcase multidirectional movement restriction & force redistribution
- Designed & standardized geometrically unconventional ducts to optimize functionality & pressure efficiency for unique obstructions
- Tabulate capacities and pressure losses of domestic water meters to improve longevity of domestic HW/CW water piping

Deloitte & Touche LLP*Cyber Security & Risk Management*

Los Angeles, CA

June 2019 – August 2019

- Researched the International Organization for Standardization (ISO) for security strategies to enhance breach responsiveness
- Analyzed client databases and customer technologies in order to identify potential disruptions to IT systems
- Implemented administrative actions and cost-effective solutions to ensure adequate protection of company technology and reputation
- Developed technical audit methodologies to identify appropriate client software implementation and module usage
- Identified areas of disproportionate software access between client & customer in order to mitigate financial hemorrhaging

Coleman Fung Institute for Engineering Leadership*Research & Design Fellow, University of California Berkeley*

Berkeley, CA

March 2018 – May 2019

- Selected as one of 52 design engineer fellows to ideate & rapid prototype health intervention solutions for 7 medical organizations
- Communicated with executives to schedule multi-project deliverables that effectively manage deadlines & competing priorities
- Organized detailed solution productivity reports with executive client leadership to streamline thorough design iterations
- Designed full-fidelity web-based prototype using Figma to represent a social networking wireframe for elderly patients
- Animated a children's interactive roleplaying videogame to destigmatize perspectives of communities with mental health disorders
- Produced a 3-week rapid mobile app design for children's nutrition education that serves 10,000+ students at 17 schools

Re-Inventing the Nation's Urban Water Infrastructure (ReNUWI) Program*Project Researcher, University of California Berkeley*

Berkeley, CA

June 2018 – December 2019

- Collaborated with scholars & graduate students about novel praxis on innovative research in water quality and energy efficiency
- Developed research on Bio-Inspired Synthetic Leaves to enhance solar desalination and water vapor condensation interfaces
- Presented to ReNUWI research fellows in Stanford, Colorado School of MINES, University of New Mexico, and UC Berkeley

Transfer Pre-Engineering Program (T-PREP)*Team Leader, University of California Berkeley*

Berkeley, CA

July 2018 – August 2018

- Mentored 16 incoming Mechanical Engineering transfer students from various community colleges
- Designed professional development curriculum for 32 students targeting elements of networking & effective communication
- Developed a STEAM course that taught student & faculty fundamental communication skills through theatrical improvisation

Ronald E. McNair Research Scholars Program*Research Fellow, University of California Berkeley*

Berkeley, CA

January 2018 – December 2019

- Selected as one of 26 McNair Scholar to develop novel research in the field of Environmental Engineering
- Developed biosynthetic leaves with 78% solar energy conversion to enhance desalination processes using condensation interfaces
- Scripted communication between Peltier cooler and thermocouple using C++ in Arduino to regulate interface temperature
- Presented results at the National Ronald E. McNair Research Symposium at UCLA

National Broadcasting Company (NBCUniversal)*Mechanical Engineer, Universal Studios Hollywood*North Hollywood, CA
June 2017 – August 2017

- Awarded West Coast NBC Fellowship and collaborated with senior executives to optimize guest experience on themed attractions
- Facilitate interdepartmental communication between Rides & Show crew to streamline research & remediation of defective parts
- Optimized pneumatic motor remodel with cost-benefit analysis portfolio projected to reduce motor repairs by \$3,000+ annually
- Animated a 3D mechanical design package compiled with 36 animated brackets to streamline & homogenize power tram repairs
- Developed 2D engineering specifications that capture bracket dimensionality & visual design details for attraction manufacturers

The Zenith Insurance Company*Graphic Designer & Web Content Curator, Learning & Development*Woodland Hills, CA
June 2021 – May 2022

- Generated analyses of competitor offerings to optimize employee engagement, retention & talent development initiatives
- Facilitated executive leadership meetings to identify causes of employee turnover & brainstorm programs for employee success
- Prototyped employee Career Corner website via Figma & Wix prototyping to streamline educational & talent development programs
- Conducted user research via interviews with diverse employee talent in order to enhance company engagement & retention
- Storyboarded employee video interviews to enhance narrative progression & exemplify diversity in career growth & mentorship

*Claims Manager, Zenith Scholar***December 2018 – January 2019**

- Improved efficiency of Production Department via bank statement and financial claim reconciliation
- Cross-referenced 400+ claims with bank statements & company regulations, ensuring proper check issuance for injured workers
- Drafted and populated skeleton financial statements for end-of-year 2016-2019 CFO/CEO company transcripts to shareholders

*Technology Consultant, Zenith Scholar***December 2017 – January 2018**

- Worked alongside Senator Ricardo Lara to reform California insurance legislation
- Researched & consolidated 37 Return-To-Work (RTW) cases as a fraud investigator of private vocational rehabilitation institutions
- Facilitated corporate contractual relations & technically refined Agency Relationship Management (ARM) to 83% functionality
- Standardized ARM product variability and mitigated operation costs via Excel data field analysis and client product research

*Assistant Payroll Manager, Zenith Scholar***December 2016 – January 2017**

- Analyzed 108 data sheets of financial records to synthesize comprehensive financial reports for end of year audit
- Increased department productivity by outlining detailed action items with executive management for each pay period
- Improved communication with financial management using shared disk files as a means of reducing time inefficiency

SmG (Soul Music Group) Music Co.*Lead Actor*Granada Hills, CA
November 2015 – December 2015

- Filmed 39 hours of footage to create music video alongside award winning humanitarian and MTV artist A.S.H.E.S The Chosen
- Collaborated with Obama Administration to raise \$600MM in grants supporting equal education for disadvantaged population
- Narrated Kickstarter marketing platform focused on dismantling school to prison pipelines for black communities via education

Donald C. Tillman Water Reclamation Plant*Research Intern, City of Los Angeles*Van Nuys, CA
July 2015 – August 2015

- Researched bacterial integration as an innovative way to mitigate growing water shortage in the City of Los Angeles
- Collaborated with engineers on SAVE THE DROP Project in LA to counteract drought and store reusable water
- Evaluated Nitrosomonas bacterial integration to mitigate thermal energy consumption and brine stream in desalination plants
- Delivered high-level overview of the necessity of bacterial integration to board members at City Hall

PEER-REVIEW PUBLICATIONS

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- Finnerty, Casey T. K., Menon, Akanksha K., Conway, Kelly M., Lee, Daryn, **Nelson, Matthew**, Mi, Baoxia, "3D Interfacial Solar Vapor Generation with 3 Superhigh EAI for Zero Liquid Discharge." *Joule*, 25 Aug. 2020, pp. 1–26. *Under Review*.

PROFESSIONAL AFFILIATIONS

National Theater Institute Theatermakers Summer Intensive Program

Eugene O'Neill Theatermakers Intensive Acting Fellow

Waterford, CT

June 2022 – July 2022

With a singular schedule and an unmatched breadth of training, the National Theater Institute's six semester-long programs offer students a springboard to the professional world at the two-time Tony Award-winning Eugene O'Neill Theater Center. Founded in 1970, NTI's credit-earning theater intensives—taught by industry professionals and master teachers—train actors, singers, directors, dancers, designers, playwrights and composers. In the pioneering spirit of its namesake, the Eugene O'Neill Theater Center discovers, develops, and empowers new work, new voices, and creative risk-taking. By introducing innovative artists, essential to broadening the national cultural landscape, the O'Neill serves as the Launchpad of the American Theater.

Massachusetts Institute of Technology (MIT)

Artificial Intelligence & Deep Learning Fellow

Cambridge, MA

July 2021 – August 2021

- Designed python-based computer programs using convolutional neural networks (CNNs) & image classification algorithms
- Implemented modular architecture to develop autoencoder reconstruction and noise removal of low-resolution digital drawings
- Identified system-level optimization flaws in food storage units & designed a YOLO v4 object detection solution to mitigate waste
- Surveyed 50+ users to define usage patterns, psychographics & personas that narrowed target audience & ensured user satisfaction

Harvard Business School

Virtual Peek Experience

Cambridge, MA

June 2021

- Collaborated with undergraduate college students in order to gain knowledge and insight into the Harvard MBA program
- Discussed various management strategies by studying case methodologies and dissecting industry trends
- Optimized personal brand management tactics via collaboration with HBS Career & their Professional Development Team
- Connected with HBS 2+2 Alumni to learn about firsthand experiences and opportunities within HBS
- Enhanced personal leadership criteria through detailed discussions of authentic leadership development

Virtual Venture into Management Program

June 2021

- Engaged in the Live Nation and Pharrell Williams case in order to challenge decision making, negotiation tactics and improvisation
- Discussed Business Education, networking opportunities and potentially available career routes that come with an HBS degree
- Connected with HBS faculty, Professor Anita Elberse, on the significance of business school and its diversification

Virtual Venture into Management Program

June 2020

- Engaged in case method instruction designed to analyze specific real-world business strategies with high capital
- Dissected various management challenges and opportunities across a broad range of industries and topics
- Debated in live study groups that examined various ideas and management approaches from peers and faculty
- Connected with celebrity couple Ciara & Russell Wilson regarding Business School applications, self-efficacy & entrepreneurship

Rice University Electrical & Computer Engineering

Maker 101 Electrical Computer Engineering

Houston, TX

June 2021

- Accelerated personal understanding of C++ computer language, circuit configuration and printed circuit board (PCB) design
- Scripted basic elements of Arduino to establish interface with microcontrollers and basic circuits on breadboards
- Enhanced manufacturability of unique PCB design via routing width optimization and trace minimalization
- Designed interactive consumer electronic “Whack-a-Mole” game via Arduino IDE & PCB circuitry

Thrive Scholars

STEM Track Development

Los Angeles, CA

May 2021 - June 2021

- Leveraged student perspective to identify primary areas of renovation in STEM track design and resource opportunities
- Collaborated with TIES (Teaching Institute for Excellence in STEM) CEO to synthesize design murals for Impact-Ease Charts
- Concretize channels between grounded design principles and tangible program infrastructure to implement STEM track in Thrive

Deloitte National Leadership Conference

Westlake, TX

Leadership Scholar

June 2018

- Brainstormed innovative strategies to optimize social impact of the firm's corporate clientele
- Advanced company's social media impact with devised strategies of corporate engagement in campus-wide case competition
- Packaged 3,000+ care packages for hospitalized veterans and child cancer patients with company partner Cheeriodicals

Management Leadership for Tomorrow (MLT)

Leadership Fellow

December 2017 – November 2019

- Awarded executive leadership fellowship & strategized professional brand management with multiple company executives
- Mastered technical management software skills in Microsoft Excel, PowerPoint & Word through detailed Wall Street Prep tutorials
- Devised novel corporate strategies of social engagement that enhanced the brand and social media impact of company partners
- Amplified communication, data processing and consulting skills in case competitions hosted by Deloitte, Target, and Google reps
- Programmed social media campaign within case competitions to maximize client visibility and sales, winning 1st place with my team

National Society of Leadership & Success (Sigma Alpha Pi) -UC Berkeley Chapter

Berkeley, CA

Academic Scholar, University of California Berkeley

August 2017 – May 2022

- Refined leadership skills through hands on workshops and community service activities
- Developed critical goal-oriented strategies to enhance self-actualization individually and amongst peers
- Accessed leadership seminars with established entrepreneurs and writers such as Richard Branson and Simon Sinek

SEO (Sponsors for Educational Opportunity) Career

New York, NY

SEO EDGE Participant (Technology)

April 2017 – August 2018

- Received 50+ hours of individualized coaching with detailed interview, technical and professional developmental strategies
- Learned fundamentals of object-oriented programming, strategy development & behavioral analytics regarding team development
- Completed industry-specific training & assessments on technical skill development, institutional knowledge, and attention to detail

Deloitte Risk & Financial Advisory STEM Summit

Westlake, TX

Leadership Scholar

December 2017

- Investigated strategies that assist organizations in effectively navigating operational, cyber, and financial risks
- Streamlined company operations using methods of robotics processing, cyber security & risk management
- Applied experience in strategy consulting case studies where groups of scholars streamlined company operations using
- Worked in conjunction with the Boys & Girls Club to build bikes for 120+ children in the Texas community

NRHH (National Residence Hall Honorary)

Berkeley, CA

Active Member, Golden Bear Chapter

December 2017 – August 2019

- Advocated for the interests and welfare of residence hall students via philanthropy and academic development programming
- Provided access to feminine care products to disadvantage and displaced women in shelters via crafted hygiene bag
- Collaborated with Habitat for Humanity in landscape beautification for Berkeley and Oakland's homeless & residential population

Haas Undergraduate Black Business Association

Berkeley, CA

Active Member

August 2016 – August 2018

- Presented formal seminars on business education & tangible product development techniques to 100+ high school students
- Spearheaded Google Online Marketing Challenge team to advertise & fundraise \$15,000 for the Posse Foundation
- Worked with sponsors such as Deloitte to advance their reach to Berkeley students of color within the College of Engineering

Black Engineering Science Student Association

Berkeley, CA

Active Member

August 2016 – August 2018

- Educated students on intermediate engineering methods through hands-on bridge building and coding workshops
- Facilitated 3D Printing, Virtual Reality, and Physical Science workshops to refine participants' knowledge and technical application

CONFERENCE PRESENTATIONS

- **“Simple Stories: Community Oriented Online Platform”** Invited Symposium, Department of Entrepreneurship & Technology, Coleman Fung Institute of Engineering Leadership, University of California Berkeley **May 6, 2019**
- **“Developing Bio-Inspired Condensers to Facilitate Solar Desalination”** Invited Symposium, Department of Environmental Engineering, National Ronald E. McNair Symposium, University of California Los Angeles **July 25-27, 2018**
- **“Developing Bio-Inspired Condensers to Facilitate Solar Desalination”** Invited Symposium, Department of Environmental Engineering, Berkeley Ronald E. McNair Symposium, University of California Berkeley **July 19-20, 2018**
- **“Pitch Perfect: Inspiring Interest for Your Idea”** Invited Seminar, 2018-2019 Ronald E. McNair Cohort Seminar, University of California Berkeley **June 21, 2018**
- **“Path to STEM at UC Berkeley”** Invited Panelist, Black Engineering & Science Student Association “All About STEM” Day, University of California Berkeley **April 14, 2018**
- **“The Intersection of Mechanical Engineering & Theater: Creative Engineering at Universal Studios Hollywood”** Invited Seminar, Ephraim Williams College Prep, STE(A)M Career Day **November 1, 2017**
- **“Summer Meet & Greet: Personal Development with South Central Scholars”** Invited Ambassador, Napa Valley Grille Patio, South Central Scholars Meet & Greet **June 9, 2017**

INVITED PRESENTATIONS

- Matthew M.Z. Nelson, **“The New Normal”** Elected 2022 Engineering Commencement Speaker, Invited Speaker, University of California Berkeley **May 17, 2022**
- Matthew M.Z. Nelson, Dominique Gil, Ananya Venkatraman, Justin Kim, Alexis Redford, Trevor Amarante, Ashlyn Olah **“Resident Advisor Information Session”** Invited Panelist, University of California Berkeley **November 2, 2021**
- Matthew M.Z. Nelson **“Walk in My Shoes: How Paved Roads Improve Acceleration”** Invited Speaker, Youth4SciTech, AIBytes4You, Virtual Presentation **July 31, 2021**
- Matthew M.Z. Nelson, James Colten, Rishal Staniel, Celine Foster, Ayinde Castro, **“Summer Math & Science Honors (SMASH) Program: The Benefits of MLT”** Invited Panelist, University of California Berkeley **February 11, 2021**
- Matthew M.Z. Nelson **“Summer Introduction to Engineering & Science Program: Alumni Testimony”** Invited Speaker, Los Angeles City Hall, Board of Commissioners **July 24, 2019**
- Matthew M.Z. Nelson, Mark Ansell, Andrew Ansell, Kevin Mahoney, Siobhan Garry **“Engineering and Beyond”** Invited Speaker & Panelist, University of California Berkeley **April 13, 2019**
- Matthew M.Z. Nelson **“Fung Institute for Engineering Leadership: Communication through Improvisation”** Invited Lecturer, University of California Berkeley **March 11, 2019**
- Matthew M.Z. Nelson **“Pre-Engineering Program (PREP): Communication through Improvisation”** Invited Lecturer, University of California Berkeley **July 31, 2018**
- Matthew M.Z. Nelson, Tapan Jasthi **“National Residence Hall Honorary: Professional Development Panel”** Invited Panelist, University of California Berkeley **November 4, 2018**
- Matthew M.Z. Nelson, Ari Martinez, Mark Lawson, Sarah E. O’Young **“Getting into Graduate School (GiGS): Mentorship”** Invited Panelist, University of California Berkeley **September 15, 2017**
- Matthew M.Z. Nelson, Maria Nava, Jose Cervantes, Lizz Perez **“Elements of Landing an Internship”** Invited Panelist, University of Southern California, South Central Scholars Internship Panel **July 21, 2017**
- Matthew M.Z. Nelson, Krissy Wong, Kimberly Saavedra, Alfredo Vargas **“Summer Orientation Academy: Scholarship Panel”** Invited Q&A Facilitator and Panelist, University of Southern California, South Central Scholars Orientation **June 16, 2017**

HONORS & AWARDS

• Thrive Scholars 2022 Graduating Class Scholar Speaker	2022
• UC Berkeley Engineering Commencement Speaker, University of California Berkeley, Berkeley, CA	2022
• National Theater Institute Theatermakers Intensive Fellowship, Waterford, CT	2022
• MIT FutureMakers Applied Deep Learning Trainee, Cambridge, MA	2021
• Sara Huntsman Sturgess Memorial Prize for Outstanding Artistic Accomplishment, University of California Berkeley, CA	2021
• Chevron Energy Scholarship, University of California Berkeley, CA	2019
• Intel Scholarship Program Award, United Negro College Fund, CA	2018
• PwC Haas Undergraduate Black Business Association Scholar, University of California Berkeley, CA	2018
• Fung Fellow for Wellness and Technology Innovations, Coleman Fung Institute for Engineering Leadership, CA	2018
• Ronald E. McNair Research Fellow, University of California Berkeley, CA	2018
• Deloitte National Leadership Conference Scholar, Westlake, TX	2018
• Deloitte STEM Leadership Scholar, Westlake, TX	2018
• Leadership Fellow, Management Leadership for Tomorrow	2017
• NBCUniversal West Coast Fellow, North Hollywood, CA	2017
• Dean's Honor List, University of California Berkeley, CA	2016, 2017
• SEO Corporate Leadership EDGE Fellow	2016
• Sigma Alpha Pi Honor Society, University of California Berkeley, CA	2016
• Posse Fellow, The Posse Foundation, Los Angeles, CA	2016
• SCS (South Central Scholars) Noonan Scholar, Los Angeles, CA	2016
• Zenith Scholar, Woodland Hills, CA	2016
• Los Angeles Association of Black Personnel Scholarship, Los Angeles, CA	2016
• National Academy of Future Scientists & Technologists Award of Excellence, Boston, MA	2015