Portfolios

Elizabeth Kneen Winter | Jared Kirschner | Geeta Kirschner 2018.01.24

Who are we?!?



Liz (Kneen) Winter

- Olin '08 Mechanical Engineering
- Babson '08 MsM

I've worked at Continuum for 8 years, starting out focused on mechanical engineering on medical device and consumer product programs. I've since expanded into project management, human factors engineering, and user research/business strategy work. I enjoy life as a generalist who dives deep on projects learning new industries and skills in order to improve product strategy from opportunity through execution for my clients.

I'll gladly geek out with you about pickup trucks, fast cars, medical procedures, hiking, kayaking, and travel.



Jared Kirschner

• Olin '13 – Electrical and Computer Engineering

I've worked at Continuum for over 4 years, doing anything reasonably called (or tangentially-related to) software. I've developed embedded firmware for regulated medical devices, full-stack web applications for a variety of industries, data analysis scripts for heavy R&D work, and wizard-of-Oz style testing rigs for user testing. One of the most important roles I play on most projects is to bridge engineering and <other> (e.g., strategy, design, human factors). My work requires me to constantly learn new skills and technologies, and to build connections with my diverse set of coworkers.

I'll gladly geek out with you about hiking, board games, and process improvement (technology or otherwise).



Geeta Kirschner

• Olin '13.5 – Mechanical Engineering

I've worked at Continuum for just about 4 months doing design strategy. I'm officially an Innovation Capability Strategist (help businesses learn our process as we do a project), but I am a human-centered strategist at my core.



A Few Disclaimers to Start

- There is no singular "right" way to do a portfolio. No two portfolios should look alike.
- We're not experts... we have just learned through trial and error and reviewing portfolios for hiring at work.
- Most of our experience is with ME, ECE, and product strategy / user research. However, the underlying portfolio strategy and philosophy will apply to other disciplines.
- We graduated Olin in 2008 and 2013. We're sure to get some course names wrong, but we're always happy when courses morph as it's a sign that Olin keeps changing ☺.

What is it and what's the point?

Content and context
Storytelling
Platforms and tools
Words of wisdom from reviewers
Open group discussion
1:1 feedback on YOUR portfolio



What is a portfolio?

A visual representation of your work that highlights your thought process, skills, and execution of projects

They take many forms. It could be a pdf, website, code repositories, physical prototypes, etc —just consider your audience

Portfolios are not just for art/design students:

- ME: most engineering employers require them!
- Software web/app: often expected and as a website
- ECE (not software web/app-specific): not expected, but allows you to stand out as a candidate

What's the point?

John Doe



summary

resourceful and creative mechanical design engineer with a diverse product design background, including extensive mechanical cad knowledge, plastic and sheetmetal part design, mechanism design, research and development, prototyping, and testing experience. well-versed in design controls, quality systems, project management, and vendor relations.

education

rensselaer polytechnic institute, troy, new york, usa bachelor of science, aeronautical engineering, may 2000

employment

boston device development, newton, massachusetts, usa

consulting engineer, december 2012 - july 2014

development, design, and documentation on an educational robotics toy system and a handheld precision scientific instrument.

consulting engineer, july 2013 - january 2014

detailed design of multiple high-volume household products and appliances.

radius product development, clinton, massachusetts, usa

preliminary development of a foodservice product.

mimoco, boston, massachusetts, usa.

consulting engineer, july 2012 - present

engineering design for assorted current and future designer electronics products.

motiv design, boston, massachusetts, usa senior mechanical engineer, october 2011 – october 2012

realized industrial design for high-volume consumer products, including housewares and small appliances. generated concept, prototype, and detail designs for internal mechanisms. designed internal and external parts for handoff to overseas manufacturers.

Insight product development, maynard, massachusetts, usa mechanical engineer/senior mechanical engineer, october 2004 – october 2011

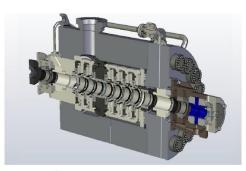
as part of cross-discipline teams working closely with clients, designed medical devices and disposables, telecommunications equipment, consumer products, electronics, scientific instruments, and other products. responsibilities extended from brainstorming, concept generation, refinement and review, to detailed engineering design and production handoff. typical project elements included industrial design implementation, prototype construction, testing, analysis, and evaluation, and design for manufacturing. experienced with selection of materials, processes, vendors, electronic and mechanical components, other work entailed project planning and pre-sales efforts, medical device design controls, user

This was the first full project given to me on co-op. My objective was to create a robust and parametric model in SolidWorks based on a collection of 2D drawings.

The model contained over 200 parts including turbine blades, nuts, bolts, pipes, and O-rings.

Geometry matched up precisely with schematics.

Model was later used to create demonstration videos of the pump's features and operation for marketing purposes.







Tells you...

SHOWS you...



In the mind of your audience...

- I'm the hiring manager. Your application materials are buried in a stack that I want to get through as quickly as possible. I've got plenty else to do.
- I'm going to scan your resume quickly. You best make it easy for me. A solid layout helps. Only include what adds value, be sure to list your key skills.
- If I look at your portfolio, it's because I'm on the fence after your resume or prepping for your interview. I'm looking to check specific boxes. Don't expect that I'll read everything ahead. You're going to talk about it anyways during the interview.
- Interview time. Okay, time to understand their thought process in approaching projects and specific problems. Give them time to tell their story, then let me ask lots of questions to understand the depth of their knowledge and decision making.

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What is it and what's the point?

Content and context

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Content & Context







Do your homework.

Know your audience and cater what you show to address what they want to see.

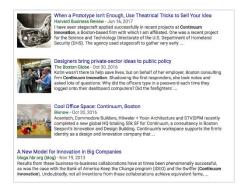
...this will require research on the company and position



The job posting



Networking at events



Google-fu



Company website, blog, and case studies



Informational interviews (talk to people)

Mechanical Engineering | Boston, MA, United States

Continuum is looking for an enthusiastic and talented mechanical engineer to join its multidisciplinary team of engineers, designers, and strategists to work in our Boston office's Mechanical Engineering group.

Who We Are

Continuum is a global design and innovation consultancy that creates products, services and advanced systems that work for people and the businesses that serve them. Working with companies from startup technology ventures to global manufacturers, the Continuum Mechanical Engineering team works in collaboration with internal and external partners using human centered design to develop technology-based products and systems that are valued by people and transform businesses. Continuum has more than 150 full-time employees, working out of five offices around the world. Approximately 70 percent of our work is in Medical devices and systems with the other 30 percent in consumer and commercial sectors. Continuum is made up of multi-disciplinary and multi-cultural professionals with diverse experiences, including anthropologists, architects, business strategists, economists, electrical, mechanical and software engineers, psychologists and designers. Since 1983, Continuum has created meaningful design solutions for companies and organizations worldwide, including Mindray, Respironics, Johnson and Johnson, Herman Miller, NIH, Avedro, Insulet, Amplifon and Affymetrix.

Who You Are

- •You have a solid background with 3-D CAD tools (SolidWorks and Pro/E), manufacturing processes, and lab and shop work.
- •You are creative, energetic and passionate about solving problems.
- •You care about the big picture and are thorough about the details.
- •You communicate effectively, play nicely with others, love getting your hands dirty, and your attitude is mostly in-check.
- •You know your way around a shop, can develop simple proof-of-concept prototypes, have a strong theoretical background, and at least a BSME with 2-3 years of experience in a creative and quality-oriented design and development environment.

Online Application Process

Please create your cover letter and upload your resume and work samples as a 'Resume Attachment' in the resume attachment section of the application. Attachments must be formatted as an Adobe PDF, PowerPoint or Word document.

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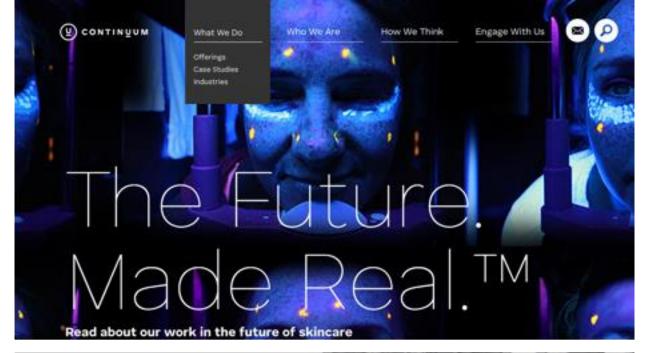
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What We Offer

Applying three decades of experience, we use detailed ethnographic, physiological, and psychological research to define the product strategy that maximizes value for a specific group of consumers. Then, working with R&D, engineering, and external suppliers, we design within tight technical and cost constraints to deliver that value proposition. The delivery and implementation of these results are as considered as the planning and creation of each project we work on.

SCOPE Product Design Research / IS Robotics Modcon

CompArch

POE

ADE

SCOPE Product Des Product Des

PROJECTS!!! POE ADE

PORTFOLIOS

Do...

Brainstorm a list of all your projects to date and select projects that:

- Learn about & target the position you are applying for
- Show a range of relevant work and skills (i.e. different types of projects)
- Highlight your strengths
- Display your interests and character
- You are allowed to discuss (confidentiality)
- Organize your entries to focus on the most relevant and interesting 3-4



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Make your life easier — document your work and keep design notebooks throughout your career!



Don't...

- Include projects you don't remember—you will be quizzed
- Claim someone else's work
- Tell them about the summer at pizza hut

What is it and what's the point?

Content and context

Storytelling

Platforms and tools
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Storytelling

A solid understanding of the overall goal and the process to get there is more important than the pretty pictures of the result.

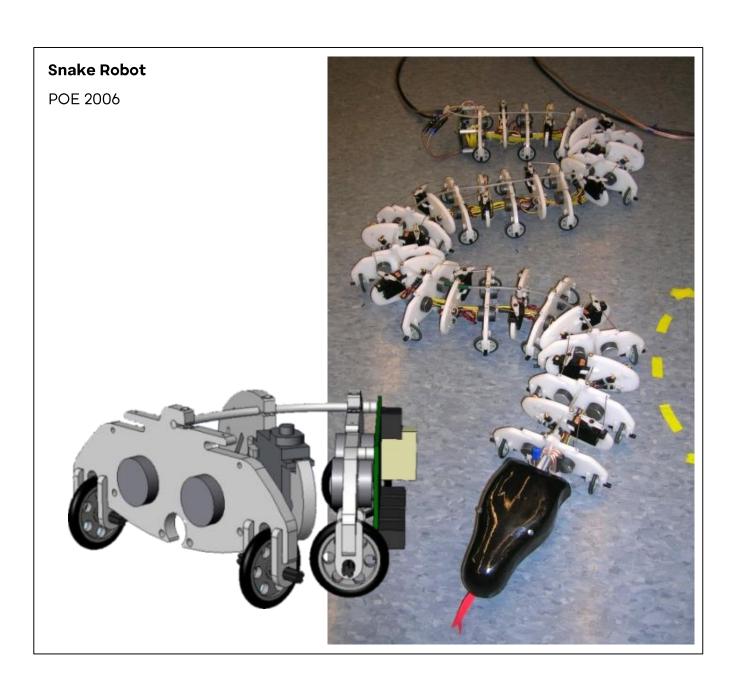
We want to know how you think.



Storytelling

Pretend you are hiring a new engineer...

What does this portfolio entry tell you about the candidate?



Specific Roles:

- Team manager (scheduling, finances, procurement)
- · Mechanical design co-lead
- · Fabrication co-lead

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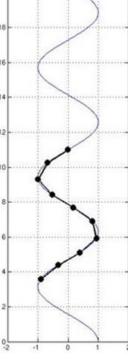
ulti-d







Model of snake serpentine gait



system design

Iterative Design • Prototyping • Robotics • System Integration

Phase 1: Direct Drive

- · Straightforward mechanical design built with goal of giving the electrical and computer engineers a basic platform to work with
- · Powered by direct drive between servos and adjoining rib





Phase 2: Skeleton Sidewinder

- First design with continuous spine and linkages to model snake's muscular structure
- Slow movement because of lack of fluctuation space between ribs
- · Low friction due to lightweight design causes for slip



Phase 3: Wishbone Ribs

- dead weight to increase the force normal and friction
- · Fast movement
- · Good control over snake's path, matched model
- · Eliminated heat staking and most hardware from assembly by making pieces snap-fit





Phase 4: Final Design

- · Revised linkage design to prevent them from popping out
- · Added thermoformed head to house circuit boards
- · Integrated wire management system into rib design
- · Wider base prevents spills
- · Integrated weights allow for greater friction, and thus better movement
- Excellent control (matched model)
- Drivable by computer simulation or through joystick





Storytelling | An Outline

(1) THE CONTEXT / SETUP

Provocative statement of the problem or challenge you faced. What was the starting point and the end goal? What was your role (if a team project)?



(2) WHAT YOU DID

What was your process? What tools did you utilize (and why)?

(3) THE "AHA"

What did you learn and take away from the task/prototype/project?

(4) THE OUTCOME

Connect the insights to the result

(5) DEEPER DIVE

Show tidbits of your skills that you can reference in an interview. Test results, block chart diagrams, sketches, etc.



Storytelling | An Outline

DO

- Tailor your message to your audience—consider what the employer is looking to learn/see
- Focus on the process and the insights and connect it to the end result
- Use headlines/tags to draw readers eyes
- Use a conversational tone unless prompted otherwise (this is not an academic publication)
- Talk about collaboration and roles
- Have a purpose for everything you include
- Ask several people to review your portfolio before you publish it to make sure it resonates

DO NOT

- Go into unnecessary detail
- Tell a chronological process story of every small step you took

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Platforms and Tools—What matters?

- Doesn't hinder your storytelling (avoid websites targeted at graphical designers that is a big page of images with small captions)
- 2. Offers flexibility when submitting to different companies
- 3. Professional, clean visual look
- 4. Sharable format for applications <u>and</u> presentations
- 5. Allows you to edit/update over time
- 6. Do you need password protection for confidentiality?
- 7. Cost (don't worry, there are free options)

Platforms and Tools



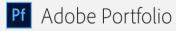
- Easy if you don't have web experience
- Fluid for presenting in interview
- Some application portals require it as an attachment
- Always PDF it!



- Free (can upgrade for more features)
- Templates for this purpose
- Gives you flexibility in formatting

GitHub

- Highlight 1-3 repos that you want the company to look at, and ideally provide some context
- What's the output of this software? A
 website that can be visited? Screenshots of
 it in use included in the README.md file?



- Designed for designers, but ok for engineers
- Visually appealing templates
- Integrated with Behance, an online network of design focused portfolios
- Adobe creative cloud subscription (\$) required



- Require paid subscription
- Visually appealing templates
- Flexibility for password protection and custom domains

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Words of wisdom from other portfolio reviewers...

"I delete resumes and portfolios with spelling or punctuation errors. Proof-read. Engineering is a detailed profession and it's really troubling to me when I see a typo (how hard is it to run a quick spell check?!)"

"It's not interesting that you worked on some cool project, if all you really did was order parts. Focus on the challenge (even if it was just a hard to find part...)."

"Be specific about your contribution. I see the same Olin project on different people's resumes with no differentiation."

"Remember to keep samples of your work. There are some projects I worked on where I wish I had...especially 25 years later..."

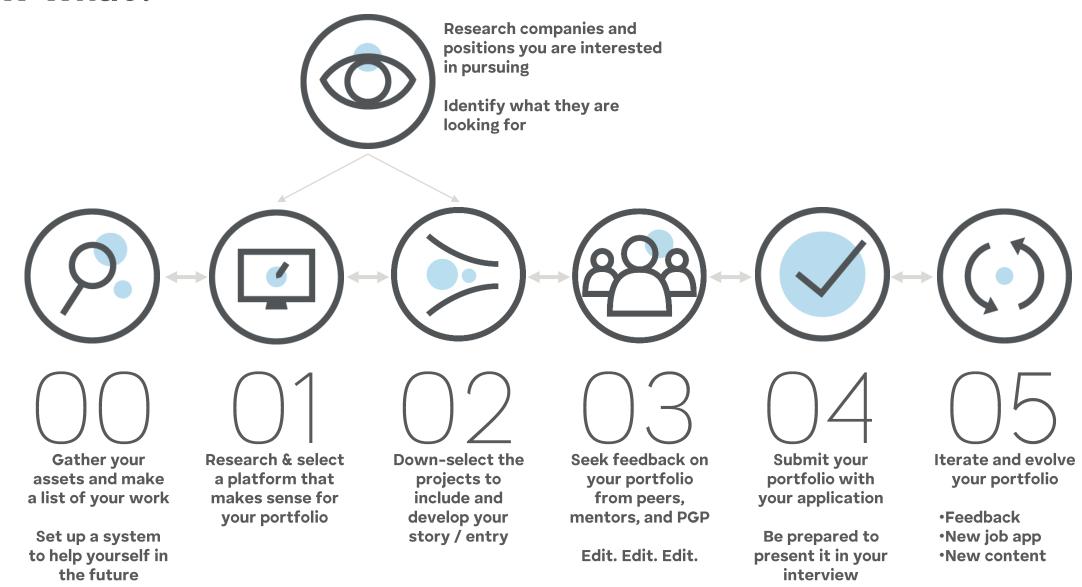
Do not lie. Ever.

Less can be more.

Personality is great ...so is Professionalism.

Have fun!!!

Now what?



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