George **Sun**

PhD, Biological Engineering

New Lab, 19 Morris Ave, Brooklyn, NY, 02141

(310)985-5901 | ge0rge.sun10@gmail.com | www.mrsunny.tech | mrsunny0 | george-lele-sun

Education

Ph.D. Biological Engineering — *Cambridge, MA*

Massachusetts Institute of Technology, GPA 4.90/5.00 — *Aug 2014 - June 2019*

B.S. Biomedical Engineering and **Electrical Engineering & Computer Science** — *Berkeley, CA*

University of California Berkeley, GPA 3.96/4.00 — *Aug 2010 - 2014*

Work Experience

Nextiles, Inc. — *Brooklyn, NY*

Founder & CTO — *June. 2019 - Present*

- Founded Nextiles, a startup built on re-thinking wearable technologies by using conductive sewable threads. Tasked with developing new wearable technologies based on fabric-based sensors. Merging material science with advanced textile manufacturing.
- Raised >$100K on non-dilutive grants, authored 3 approved patents, and established a hardware manufacturing space in Brookyln, NYC.

Design Lab *X* Puma — *Cambridge & Nuremberg*

Lead Embedded Engineer — *Jan. 2017 - Jan. 2018*

- Led a team of engineers and designers with Puma's Innovation Team to redesign and instrument their line of athletic shoes
- Focused on embedding force-sensitive materials into the shoe to track gait and power using machine models.

Communication Lab, MIT — *Cambridge, MA*

Communication Fellow & Instructor — *Jun. 2015 - May. 2019*

- Facilitated workshops and seminars on effective communication and scientific presentation.
- Worked with MIT's *GEL* program and helped teach *Leading Creative Teams* while developing course content for MIT.

Research Experience

Biomolecular Materials Group, MIT — *Cambridge, MA*

PhD, Graduate Researcher — *Aug. 2014 - Apr. 2016*

- Engineered yeast as a bioremediation agent to consume and recycle heavy metals, particularly from electronics and mining runoff.
- Utilized laboratory techniques ranging from material science (ICP, EDX, XRD), molecular biology (PCR, genetic circuits, transformations), chemistry (chromatography, electrochemistry), and analytical tools (matplotlib, scikit-learn, tidyverse).
- Awarded several grants (NSF, Bose, CEHS) and honors for scientific talks and presentations on environmental remediation technologies.

Molecular Engineering Imaging and Control, Berkeley → Caltech — *Berkeley/ Pasadena, CA*

Undergraduate Researcher — *Jan. 2011 - Aug. 2014*

- Conducted research in biomolecular tools such as stem cell therapy and biological contrast agents for medical imaging.
- Independently researched the effects of metallo-enzymes on enhancing the magnetic properties of neurological systems for NMR and MRI.
- Transitioned to Caltech's Chemical Engineering department in the last year of college to finalize research.

Publications

Academic Journals

Sun, George L., and Angela M. Belcher. "Engineering supramolecular forming proteins to chelate heavy metals for waste water remediation." (2020). *in submission*.

Sun, George L., Erin E. Reynolds, and Angela M. Belcher. "Using yeast to sustainably remediate and extract heavy metals from wastewaters." *Nature sustainability* (2020). *in review*.

Gilbert, C., Tang, T. C., Ott, W., Dorr, B. A., Shaw, W. M., **Sun, G. L.**, ... & Ellis, T. "Living materials with programmable functionalities grown from engineered microbial co-cultures." *bioRxiv*. (2019).

Sun, George L., Erin E. Reynolds, and Angela M. Belcher. "Designing yeast as plant-like hyperaccumulators for heavy metals." *Nature communications* 10.1 (2019): 1-12.

Shapiro, M. G., Ramirez, R. M., Sperling, L. J., **Sun, G.**, Sun, J., Pines, A., ... & Bajaj, V. S. (2014). "Genetically encoded reporters for hyperpolarized xenon magnetic resonance imaging." *Nature chemistry* 6.7 (2014): 629.

Web Publications

Sun, George L... "File Structure". *Mechanical Engineering Communication Lab, MIT*. (2019). `https://mitcommlab.mit.edu/meche/commkit/file-structure/`.

McLean, K., Peters J., Ramamoorthy, D., **Sun, G.**, Toth T., Triassi A., Prerna B. "Awesome BECL Resources". *Biological Engineering Communication Lab, MIT*. (2019). `https://github.com/MIT-BECL/awesome-becl-resources`.

Sun, G., Wang, D., Gerarld, K. "Air Guitar". *Instructables*. (2016). `https://www.instructables.com/id/Air-Guitar/`.

Patents

Sun, George L... "Devices for static and dynamic body measurements." US Patent 16/573,727. 20 November 2019. (approved, not yet public)

Sun, George L... "Methods of manufacturing devices for static and dynamic body measurements." US Patent 10,458,866. 29 October 2019.

Sun, George L... "Systems, methods, and devices for static and dynamic body measurements." US Patent 10,378,975. 13 August 2019.

Sun, George L., and Angela M. Belcher. "Engineered yeast as a method for bioremediation." U.S. Patent 15/887,305. 18 August 2018

Honors & Awards

2019-*Curr*	**Member**	New Lab Innovation Space	*New York, NY*
2019	**Member**	Delta V Accelerator	*New York, NY*
2019	**Recipient**	NSF I-Corps Program	*Philadelphia, PA*
2014-2019	**Recipient**	NSF Graduate Research Fellowship Program	*Cambridge, MA*
2016-2019	**Recipient**	Amar G. Bose Research Grant	*Cambridge, MA*
2018-2019	**Recipient**	CEHS Pilot Grant	*Cambridge, MA*

Skills

Machinery	Solder/Reflow, 2-3DoF CNC, Vinyl Cutters, Laser Cutters, 3D Printing, Molding/Casting, Screen Printing, Vacuum Forming
Digital Fabrication	Eagle PCB, Fusion CAD/CAM, Techpacker, Multimeter/Oscilloscope, TTL/UART/I^2C/ISP Communication
DevOps	Microsoft Suite, Airtable, Coda, Slack, Asana, Docsend, Git/hub/lab, GoDaddy, Webflow, Heroku, Mlab, AWS
Programming	Javascript (Node.js), Python (Matplotlib, Numpy, Scipy, Pandas, Notebooks), R (Tidyverse, Notebooks), GO, LaTeX
Back-end	Express, MongoDB, Websockets, BLE Stack, REST API
Front-end	D3.js, Three.js, Leaflet.js, Gulp, Yeoman, HTML5, Bootstrap, SASS