Aja Hartman

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Introduction

A materials scientist and mechanical engineer with a decade of experience in the digital manufacturing industry. Passionate about exploring materials processing in both career and through personal projects and cooking.

Education

2018–2021 **M.S. Materials Engineering**, *Santa Clara University*.

2011–2015 **B.S. Mechanical Engineering major, Aerospace minor**, *Santa Clara University*.

Experience

2015–current **Research Engineer**, *HP Labs*, Palo Alto, CA.
Combining mechanical architecture, material science, and 3D print processing to further Multi Jet Fusion technology. Metrology specialist with ASTM and ISO standards for material characterization, defining standard reference measurements, and standard operating procedures across sites. Tools: SolidWorks, Creo, MATLAB, Materialize Magics, Netfabb, ImageJ, 3D printers, TGA, DSC, SEM, STM, EDX, XRD

2014 **Manager Intern**, *Gilbane Construction*, San Jose, CA.
Responsible for communication and coordination between the property owners, architects, and general contractors.

2013–2014 **ME Designer**, *Gov. Contractor*, Palo Alto, CA.
Invented a solution to increase voting accuracy.

2013 **Machine Shop Manager Intern**, *Carnegie Mellon University*, Moffet Field.
Responsible for electrical and mechanical machine maintenance and machine certification for students and teachers.

Issued Patents

U.S. Patent 11525542, "3D printer with a UV light absorbing agent", Issued Dec 13, 2022
U.S. Patent 11511479, "Temperature control in 3D object formation", Issues Nov 29, 2022
E.P. Patent 3436240, "Build material layer quality level determination", Issued Aug 31, 2022
U.S. Patent 11414561, "Fusing agent includign a metal bis(dithiolene) salt", Issued Aug 16, 2022
U.S. Patent 11383433, "Fusing agent(s)", Issued Jul 12, 2022
U.S. Patent 11383435, "Three-dimensional printing", Issued Jul 12, 2022
U.S. Patent 11192306, "Build layer temperature control", Issued Dec 7, 2021
E.P. Patent 3452268, "Finishing a 3d printed object", Issued Oct 20, 2021
U.S. Patent 11072123, "Deviant control in additive manufacturing", Jul 27, 2021
E.P. Patent 3519164, "Fusing agent including a metal bis(dithiolene) complex", Issued Jun 30, 2010
U.S. Patent 11008479, "Fusing agent including a tetraphenyldiamine-based dye", May 18, 2021
U.S. Patent 10857733, "3D printing with discolorable near-infrared absorbing dye", Issued Dec 8, 2020
U.S. Patent 10832394, "Build material layer quality level determination", Issued Nov 10, 2020
U.S. Patent 10781228, "Fusing agent including a metal bis(dithiolene) complex", Issued Nov 22, 2020
U.S. Patent 10647053, "Three-dimensional (3D) printing", Issued May 12, 2020

Publications

"Closed Loop Control Utilizing In-situ Pattern Printing and reading for Quality Level Determination in Additive Manufacturing", *Solid Freeform Fabrication Symposium 2022*
"Opacity Modulation in Additive Manufacturing", *Solid Freeform Fabrication Symposium 2022*
"Powder Bed Fusion of Polymers with Ultraviolet Light Emitting Diode Energy Sources", *Solid Freeform Fabrication Symposium 2022*
"Multi Jet Fusion printed lattice materials: Characterization and prediction of mechanical performance", *Adv. Eng. Mater. 2023*
"Effect of Build Parameters on the Mechanical Behavior of Polymeric Materials Produced by Multijet Fusion", *Adv. Eng. Mater. 2021*
"Effect of Build Parameters on the Material Properties of Printed Parts Produced by Multi-jet Fusion", *Solid Freeform Fabrication Symposium 2021*
"3D Printing of Polymers with Xenon Flash Lamp", *Solid Freeform Fabrication Symposium 2019*
"Scalability of Activating Fusing Agent for Enabling Multi-Color and Translucent 3D Printing with Multi Jet Fusion", *Halftoning Printing Imaging Content Symposium 2018*
"Nickel Dithiolene Based Fusing Agent for HP's MJF 3D Printing of White Parts", *Chemist Summit 2017*
"Method to Voxel Control Variable Fusing Ability for Multi-Characteristic 3D Printing with MJF", *Halftoning Printing Imaging Content Symposium 2018*
"The Conductive Voxel: Conductive Features within Polymer Parts Using MJF", *Solid Freeform Fabrication Symposium 2017*
"The Mechanical Voxel: Variable Rigidity Polymer Parts Using MJF", *Solid Freeform Fabrication Symposium 2017*
"Mechanical Voxel: Creating Variable Rigidity in MJF Printed Parts", *Chemist Summit 2017*
"Pattern Recognition Method to Qualifying HP Multi Jet Fusion Printing and Printed Parts", *Halftoning Printing Imaging Content Symposium 2016*
"The Mechanical Property Voxel: Mechanical Tailoring Agents for Modifying Mechanical Properties of MJF Parts at a Voxel Level", *Halftoning Printing Imaging Content Symposium 2016*
"Proof of Concept Planetary Lander Test Article", *International Planetary Probe Workshop 2015*

Awards and Honors

2022 Wow Award, *HP*
2022 Patent Award, *Society of Women Engineers*
2022 Spotlight Award, *HP*
2022 Community Spotlight Award, *HP*
2021 Patent Award, *Society of Women Engineers*
2017 Leading the Way Award, *HP*
2017 Reinventor Award, *HP*
2015 Magna Cum Laude, *Santa Clara University*
2011–2015 Dean's List of School of Engineering, *Santa Clara University*

Memberships

Tau Beta Pi Engineering Honor's Society, Society of Women in Engineering, American Society of Mechanical Engineers