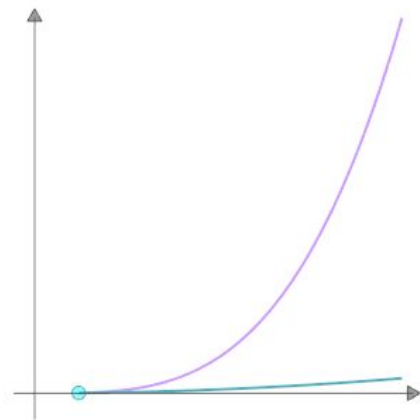
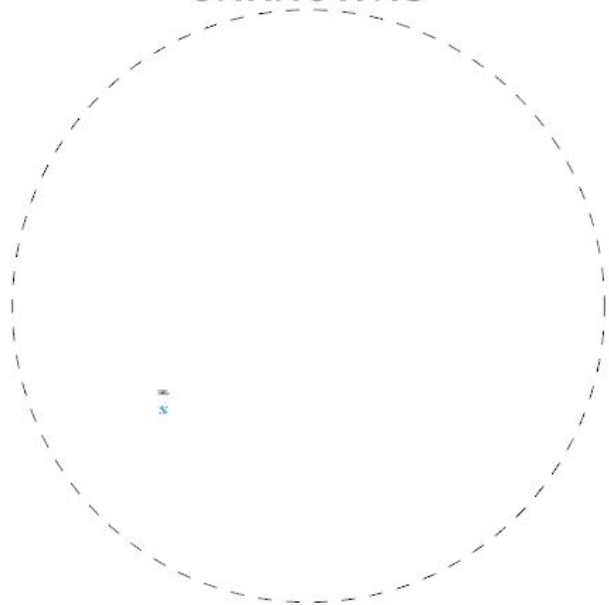


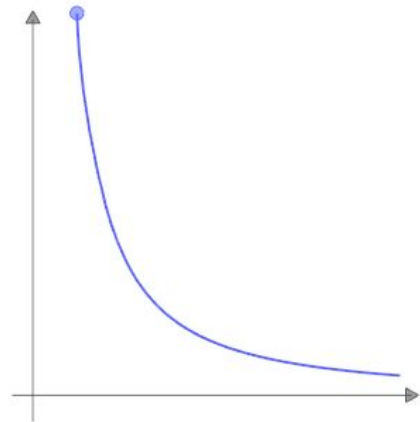
# GSAPP SKILL TRAILS

<https://skilltrails.gsapp.org>

# UNKNOWN UNKNOWN



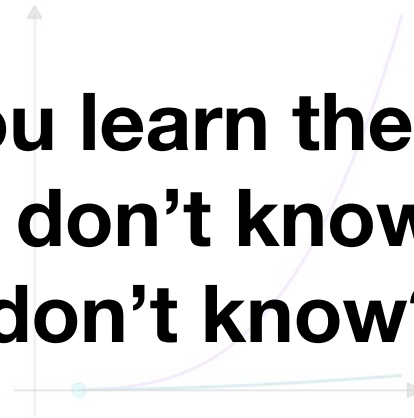
THINGS I DON'T KNOW vs.  
THINGS I KNOW



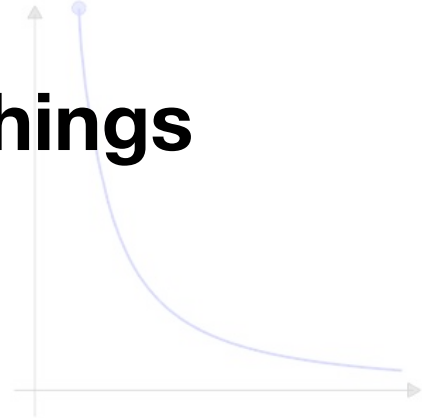
THE PERCENTAGE OF THINGS  
I KNOW THAT I KNOW

UNKNOWN  
UNKNOWN

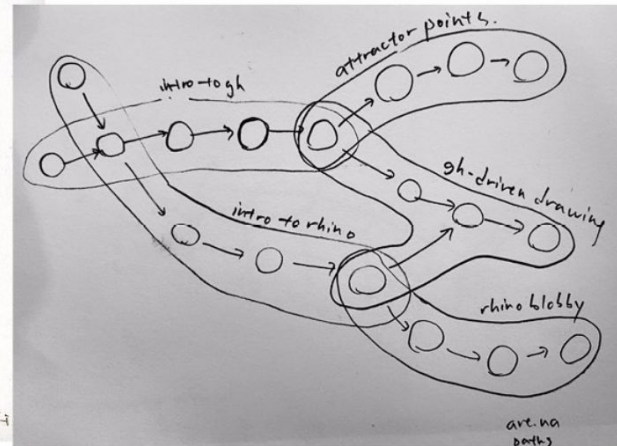
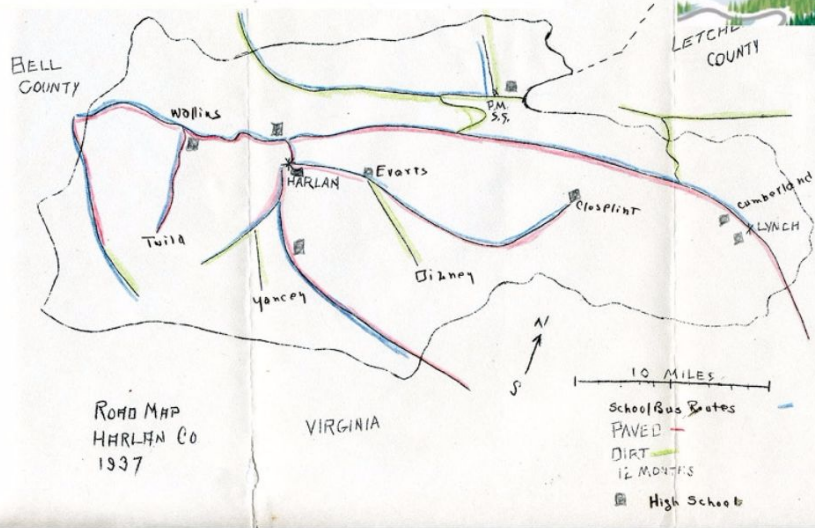
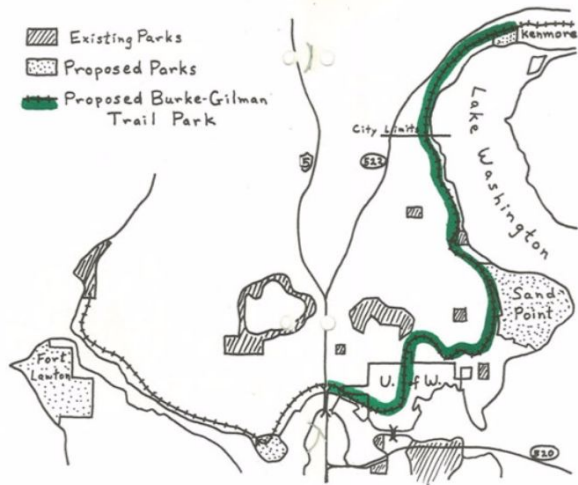
**How do you learn the things  
you don't know  
you don't know?**



THINGS I DON'T KNOW vs.  
THINGS I KNOW



THE PERCENTAGE OF THINGS  
I KNOW THAT I KNOW



**TEXAS PARKS & WILDLIFE**  
**Garner State Park**

**Hiking Trail Map**

*(intended as a guide only - trails may not be exact)*

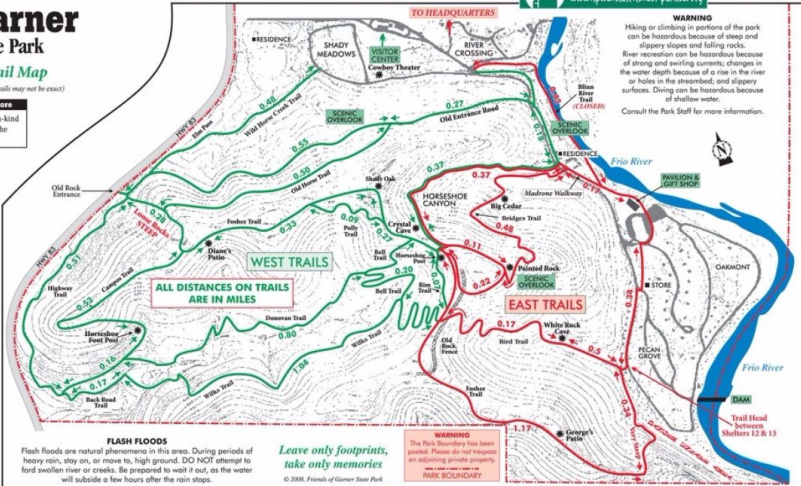
**Texas State Parks Store**  
 (intended as a guide only - trails may not be exact)  
 T-shirts, caps and more of a kind gift items are available at the Visitor Center.

**Park Reservations**  
**512-389-8900**  
 www.tpwd.state.tx.us

**EMERGENCY PHONE NUMBERS**  
 911  
 830-232-6637  
 830-232-6638  
 830-232-6138  
 830-232-6285

**Pick it up Partner!**  
 Take pride in your Texas state park, please help keep it clean.  
 Please help our staff take care of your park. Round up your trash and toss it into a waste container.  
 "Picking it up" also protects wildlife from eating human food or other harmful substances.  
 Thanks partner!

234 RR 1050  
 Concan, Texas 78838  
 830-232-6132



**SUMMER TRAILS**

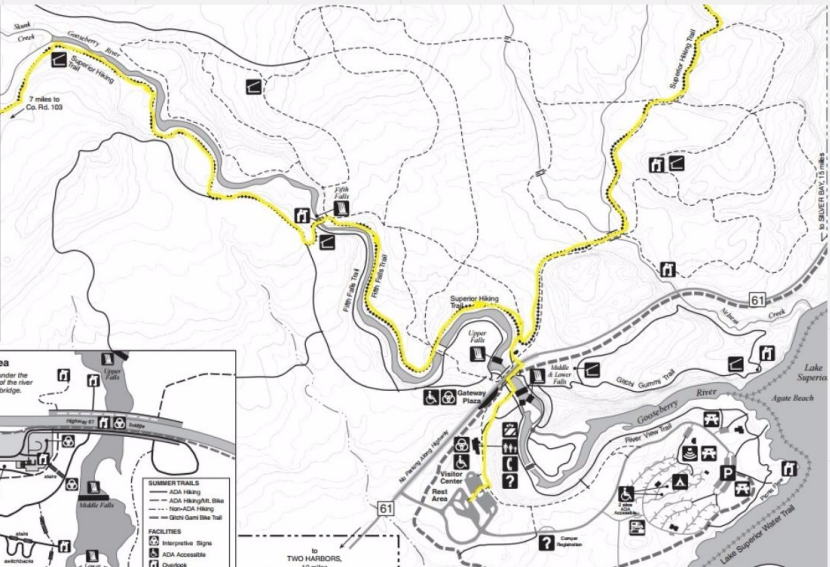
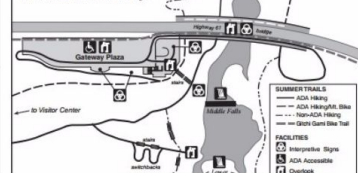
- Hiking
- - - Mt. Bike/Hiking
- Superior Hiking Trail
- == Gilchi-Garni Bike Trail

**FACILITIES**

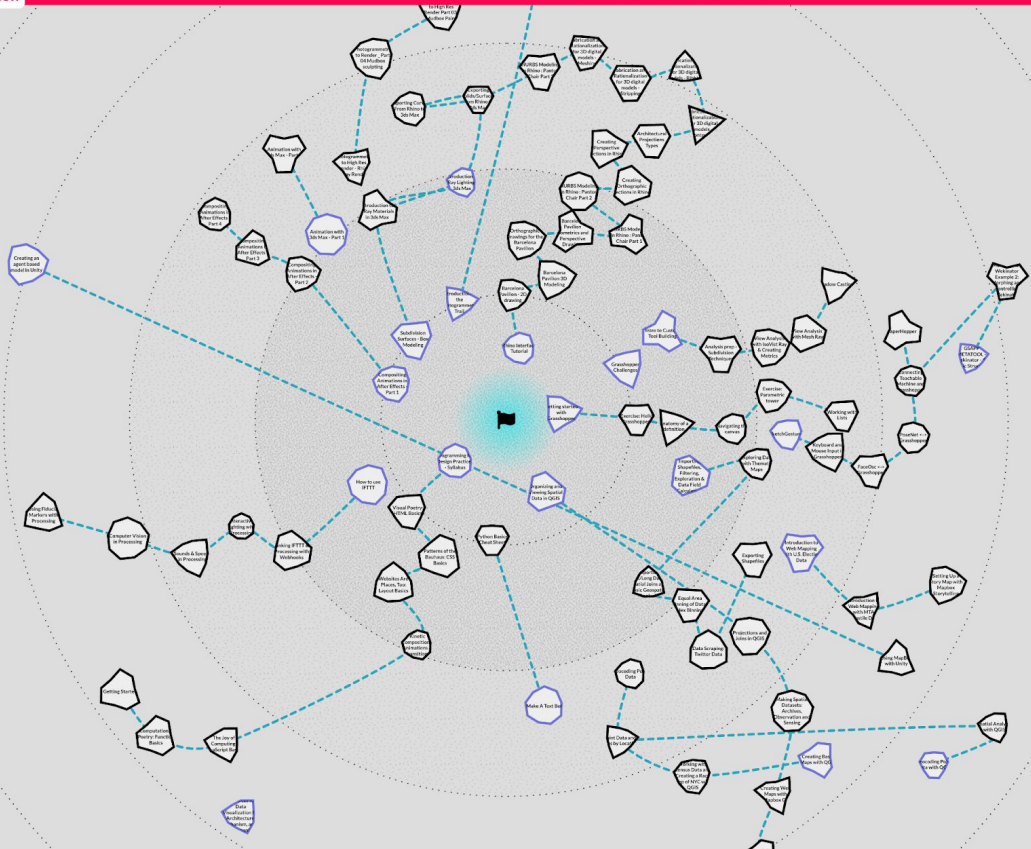
- V** Visitor Center
- I** Information Office
- C** Interpretive Display
- A** ADA Accessible
- P** Picnic Area
- O** Overlook
- C** Campground
- F** Waterfall
- P** Parking
- A** Amphitheater
- T** Trail Shelter
- G** Group Camp
- N** Nature Store
- T** Telephone
- D** Trailer Dump Station
- P** Private Property
- P** Public Use Prohibited

**Gateway Plaza Area**

Note: Hikers and bikers can walk under the highway if bridges on both sides of the river or creek river on catwalk beneath bridge.







GSAPP Skill Trails

https://skilltrails.gsapp.org/#/map/waypoint/rec6zXdA149D90b9d/getting-started-with-grasshopper

Map View List View

# GSAPP SKILL TRAILS

?About ?How To

**Getting started with Grasshopper**  
By Danil Nagy

[Introduction to Grasshopper](#)

Hi there and welcome! This course will teach the foundations of computational design through the design tool Grasshopper.

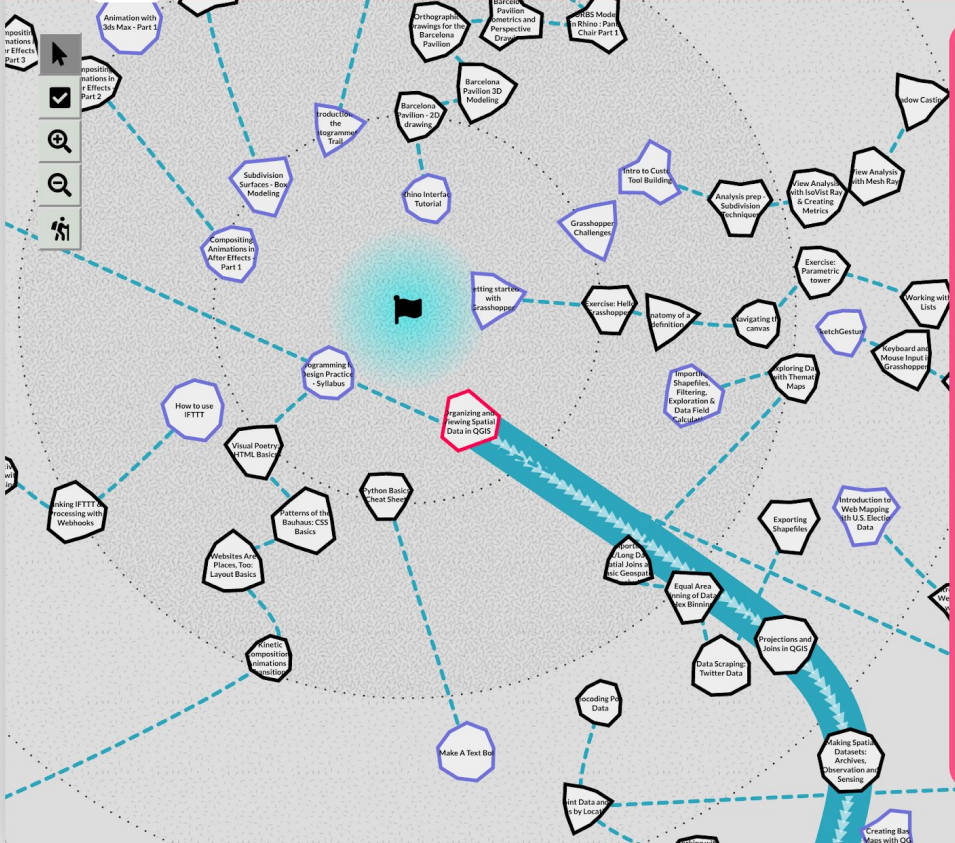
[https://medium.com/intro-to-grasshopper/getting-started-with-grasshopper-c6d9e66a4638?source=friends\\_link&sk=93614837123b80c728dc317b74c660b1](https://medium.com/intro-to-grasshopper/getting-started-with-grasshopper-c6d9e66a4638?source=friends_link&sk=93614837123b80c728dc317b74c660b1)

Mark this Waypoint as done

SOFTWARES: Grasshopper Rhino

Waypoints visible on the map include: Barcelona Pavilion 3D Modeling, Barcelona Pavilion - 2D drawing, Introduction to the program Trail, Rhino Interface Tutorial, Grasshopper Challenges, Intro to Custom Tool Building, Analysis prep Subdivision Technique, Shadow Casting, PaperHopper, New Analysis, Compositing Animations in After Effects - Part 1, Subdivision Surfaces - Box Modeling, Exercise: Hello Grasshopper, Anatomy of a Definition, Navigation canvas, Organizing and Viewing Spatial Data in QGIS, Importing Shapefiles, Filtering, Exploration & Data Field Calculations, Programming for Design Practice - Syllabus, Visual Poetry: HTML Basics, Python Basics Cheat Sheet, Patterns of the Bauhaus: CSS Basics, Exporting Shapefiles, Introduction to Web Mapping with U.S. Electric Data, Setting Up a, Websites Are, and Reporting / Long Da.





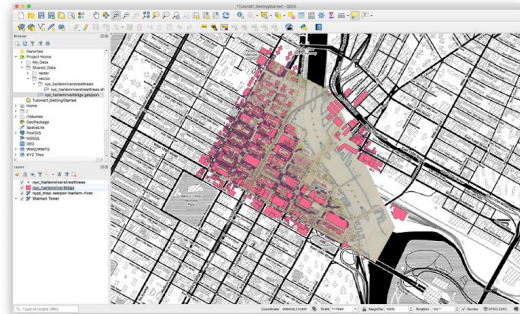
## Organizing and Viewing Spatial Data in QGIS

By Carsten Rodin for the Center for Spatial Research

Methods in Spatial Research

This tutorial is meant to introduce QGIS as a tool for working with spatial data on your own computer. First we'll review the interface. Next you'll learn to create a project and add data from a variety of sources.

[https://centerforspatialresearch.github.io/methods-in-spatial-research-sp2020/tutorials/01\\_organizing-viewing-spatial-data-in-qgis](https://centerforspatialresearch.github.io/methods-in-spatial-research-sp2020/tutorials/01_organizing-viewing-spatial-data-in-qgis)



Mark this Waypoint as done

SOFTWARES:  
TOPICS: QGIS Mapping



GSAPP Skill Trails

https://skilltrails.gsapp.org/#/list/recrCuZyRPj4h9nVL/programming-for-design-practices-syllabus

Map View List View

# GSAPP SKILL TRAILS

?About ?How To

**Working with Lists**  
Danil Nagy

**Programming for Design Practices**  
By Celeste Layne

Web design and development is a fundamental practice to learn as an introduction to Programming for Design Practices. The web is also a site -- much like architecture or spatial design, web design involves representation, design, circulation, program, interaction, experience. In this online-based course, architecture students will be introduced to programming as a medium for design practices. Students will learn the foundational, front-end languages HTML, CSS and JavaScript to create work for the web browser.

**Programming for Design Practices - Syllabus**  
Celeste Layne

**Visual Poetry: HTML Basics**  
Celeste Layne

**Patterns of the Bauhaus: CSS Basics**  
Celeste Layne

**Websites Are Places, Too: Layout Basics**  
Celeste Layne

**Kinetic Compositions: Animations & Transitions**  
Celeste Layne

**The Joy of Computing: JavaScript Basics**  
Celeste Layne

**Computational Poetry: Function Basics**  
Celeste Layne

**Getting Started**  
Celeste Layne

**Data Visualization for Architecture, Urbanism and the Humanities**

**Programming for Design Practices - Syllabus**  
By Celeste Layne

[Programming for Design Practices](#)

Web design and development is a fundamental practice to learn as an introduction to Programming for Design Practices. The web is also a site -- much like architecture or spatial design, web design involves representation, design, circulation, program, interaction, experience. In this online-based course, architecture students will be introduced to programming as a medium for design practices. Students will learn the foundational, front-end languages HTML, CSS and JavaScript to create work for the web browser.

<https://medium.com/programming-for-design-practices/programming-for-design-practices-syllabus-fall-2020-10a73395a1e>

Mark this Waypoint as done

SOFTWARES: HTML/CSS  
TOPICS: Websites

The **GSAPP Skill Trails** is an online, open platform that hosts tutorials and resources **created by Columbia GSAPP Visual Studies faculty** who teach computational design, data analysis and visualization for architectural design, urban planning and urban design. The 2020 launch presents a landscape of courses which will grow over time to include courses in other programs across GSAPP. As of June 2020, we have included at least nine courses and eighteen trails which reinforce connections and collaborations across the Visual Studies sequence.

**Laura Kurgan**, Professor of Architecture, Director of the Visual Studies Sequence,  
**Josh Uhl**, Adjunct Associate Professor, and Coordinator of the Visual Studies Sequence.

## Credits

The GSAPP Skill Trails is created, designed and developed by **Dan Taeyoung**  
The previous version, the [GSAPP Skill Tree](#), was created by **Dan Taeyoung** and **Danil Nagy**.

### Tutorials by:

**Bika Rebek**

**Carsten Rodin**

**Celeste Layne**

**Dan Taeyoung**

**Danil Nagy**

**Dare Brawley**

**Jia Zhang**

**Josh Uhl**

**Juan Francisco Saldarriaga**

**Luc Wilson**

**Violet Whitney**

# Boolean Operations

Python, coding, BIM software, GIS: a big difference in the types of computer programs and softwares that the different architecture programs use? i.e) UD v. AAD v. M Arch. If so, which are the overlapped ones that everyone should focus on getting good at?

Grasshopper, V-ray

I think maybe rhino? If you can learn Rhino super well, almost all of the other softwares will make more sense, think of it as a kind of "big toolbox" vs. other softwares which have some but not all of the same features

I would like to learn more about Python and it's uses

(see - 1) if rhino, any specific plug-ins for each program (other than the standard python, grasshopper), and 2) is there a python file for each program? Programs are outlined for each program?

Rhino and grasshopper. GIS

Python and other coding languages

I would LOVE to learn Grasshopper, 3DS Max, and more!

I would like to learn Urban visualization combining GIS and Rhino

What priorities should students focus on?

Good plug-ins

Intersection between coding and architecture

How did u change all those font sizes at the same time? +1

(♥ THIS SHEET IS GIVING ME ANXIETY Same +1 +1 +4 +5 +6+7 YESS)^2

Would love to learn Python, CAD

I would like to learn Autodesk Maya And maybe an introduction of Python and how we can use python scripts in rhino

A mix range of 3d and video making softwares

I would like to learn more about grasshopper

Arc GIS/QGIS, Urban Data and Animation Mapping / Get better with Digital Fabrication Software

Rhino, Grasshopper

Arc GIS, Grasshopper, 3ds Max

vray

More about Python coding itself, Kangaroo, other applications in grasshopper platform

Grasshopper, V-Ray, better workflows between 3D and 2D

Is BIM(Revit) a tool used at GSAPP?

IoT, AR

GIS, Data Visualization

Learn how to create animated infographics

Dynamo, Karamba, Galapagos

How to create a skill trail (interface) for project presentations GHpython, Arc GIS, VR+AR

I would like to learn Rhino and Grasshopper

Data mining - R and python

Grasshopper

Visualization technique by Rhino, Photoshop, and AI

Rhino, Grasshopper

Electronic prototyping

Autodesk Maya/ 3ds max GIS

Grasshopper and 3ds Max

Grasshopper, python

Workflow: 3ds Max/Unreal/VR+AR

Maya and maybe python...and more efficient workflow

Data sharing/interoperability for BIM (Speckle?)



Visual Studies electives available?

Can we have tools specifically for more experienced users? (what kinds of tools? -Dan)  
I mean more advance tutorials and sessions, etc. Or their contribution to the existing tools  
(Yes! We'll be continuing to add more (as more instructors add their course tutorials.. It would be helpful to know what specific tools/advanced material you're looking for - e.g. advanced GH, python, web development, revit, dynamo, etc?))

Can we get trail recos for our specific programs? (Eg: AUD)

Can experienced/advanced users contribute tutorials?( links from other sources they've used) ahead of time.  
(YES - this will be a feature that I will be adding in the coming weeks -Dan)

Will students who lack access to newer hardware be able to access all of the relevant software? (and how)

Does GSAPP provide us with Rhino 6, rendering softwares and etc.

*All these software are available on the school's computers*

When will we have access to school computers. Will we or have access when the semester starts? (what about the students who are taking online classes they won't have access to the school's computer )

**QUESTIONS/FEEDBACK**

In case some of us cant make it this fall semester (COVID19+intl. student), will we have access to resources e.g, software and others which are on assigned comps on camp?

Effective ways of creating new visualization methods - like creating equirectangular dws or spherical renderings / AR - VR

Working and communicating in a team with different skill levels

Hybrid physical-digital modeling techniques

How difficult are 3d axons to do? They are very easy to generate in Rhino - *There is a tutorial in the ADR trail on projections. Take a look at that.*

Do you all recommend that we bring our own computer as well, or not?

How should we go about learning windows based programs on a mac (like grasshopper) should we use bootcamp?

Will they be slow if we use the computer studio? *Remote Desktopting is being used in offices all over the city, so we anticipate work well in this capacity.*

How long do we have access to the computers provided to us by GSAPP, and should we bring our own computer?

Prototyping with wood.  
Virtual Models and Textures

How incorporate parameters like heat and temperature in 3D design  
(Yes! we'll be adding some - check out GECO or Ladybug for Grasshopper)

Do we need programming (coding) to know how to use ALL programs on the Trail?

*I'd love people to try out the **Programming for Design** Practices trail and provide any feedback -- what can be improved? Is wishing was covered? Could do without?*

Should incoming students buy new computers for the fall?

Can you provide a full list of software that incoming students need to study? *Would recommend focusing on concepts/techniques that apply to multiple softwares rather than specific software packages*

Technical issue; Would you kindly recommend that do we need Windows to access GSAPP's computer to use the programs or Mac is fine?  
(Personally - A windows computer (or a mac running Boot Camp) is really helpful to run most architectural software)

Are we able to bring our own PC to studio?

*Yes. Absolutely*

For Intro students - What can we learn in the summer to get us prepared for the semester?

Are visual studies courses offered every semester? Or is this mainly independent learning  
(Laura -Visual studies are offered every semester -- there are about 12 courses a semester!)

is the adobe suite not part of visual studies / skill trail?  
Some of it is - Adobe After effects, etc

How skill trail help architecture and urban design and what are programs we should prepare before coming in the fall?

Does the program offers Rhino, grasshopper course? And what's the name of the course. Thanks!

**Yes! Start here:**

<https://skilltrails.gsapp.org/#/map/waypoint/rec6zXdA149D9Ob9d/getting-started-with-grasshopper>

*^ - this is an introduction but there are other courses*

that really programs that ear/effective e can see hmark?

are most important for a rch or other programs?

*Go open data-related k with geospatial data will an)*

Is it recommended to stay on one trail at a time? Can you jump from trail to trail mid trail?  
(It's up to you! I'd recommend staying on one trail a bit, since they're offered as sequences.. but feel free to jump around -Dan)

Resources / links / ways of learning that have been helpful to you


Projects that give me specific tasks to learn from, tutorials, questions asked, etc.

LinkedIn Learning, Algorithms-Aided Design by Fulvio Wirz  
And this website by TUDelft:  
<http://wiki.bk.tudelft.nl/toi-pedia/Grasshopper>

Species of spaces and other pieces

Treehouse,  
Codecademy,  
Dan Schiffman  
Coding Train,  
Stack Overflow,  
Medium

Lynda learning

 Helen Couclelis "People Manipulate Objects (but Cultivate Fields)"

Thermal  
Delight

Thinkparametric...although it's not for free

YouTube comes in conveniently sometimes!

BlackSpectacles.com

GSD computational design course  
youtube playlist:  
<https://www.youtube.com/playlist?list=PLvxxYImPCApUXhX3te3IK32ileXHpzKY4>

Rhino is free for 60 or 90 days I believe. You should be able to use all you need before fall starts

I got Rhino educational edition as one lifetime 99 dollar purchase!! Don't know if it is the same nowadays whoa !!! 99 \$?? (edit: it is 195 now) **still a great deal! Highly recommend**

Black Spectacles

Points + Lines

I have always learnt softwares from youtube tutorials, but having used some of them in a professional setup has really helped.

Andrew Price's "Blender Guru"  
<https://www.youtube.com/channel/UCOKHwx1VCdgnwbjyb9lu1g>  
Objects + Operations

Tutorials  
GIS stack exchange +1  
Daniel Shiffman's  
youtube channel ♥ +1

Google and YouTube

All autodesk programs are free for students!

I was a part of AIAS in undergrad (an architecture organization specifically for students). Anything on their website would be helpful and is tailored for students!  
[www.aias.org](http://www.aias.org) ..... Also Polygon Runway on Youtube for Blender  
(<https://www.youtube.com/channel/UCGSJevmBuDyxjLLOBNaYMGA>)