BRIN-Q Beamer Seminar Template

QuMaT Group Meeting 20260119
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Outline

Typography & Colors

This template uses **Helvetica** for text and *Euler* for math.

We can use the custom color palette defined in the preamble:

- Normal text is Dark Grey (cw).
- Important keywords can be **Purple (cp)**.
- Alerts are naturally **Red (cr)**.
- Comments or secondary info are *Orange (co)*.

"Design is intelligence made visible."

Animated Lists (Enumerate)

Here is the **Red Circle** enumeration style with step-by-step reveal:

1. First point appears immediately.

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1. First point appears immediately.
2. Second point appears on next click.

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Here is the **Red Circle** enumeration style with step-by-step reveal:

1. First point appears immediately.
2. Second point appears on next click.
3. Third point appears last.
   - Sub-items use the standard purple arrow.
   - They fit strictly within the layout.

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Here is the **Red Circle** enumeration style with step-by-step reveal:

1. First point appears immediately.
2. Second point appears on next click.
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   - Sub-items use the standard purple arrow.
   - They fit strictly within the layout.

Transitions are smooth and clear!

Theorems & Blocks

Theorem 1 (Pythagoras)

In a right-angled triangle, the square of the hypotenuse c is equal to the sum of squares of the other two sides:

$$a^2 + b^2 = c^2$$

Example: Circle Area

If the radius is $r = 10$, then the area is:

$$A = \pi r^2 = 100\pi$$

Euler Math Font Capabilities

The `eulervm` package gives a distinct "handwritten" look.

- **Greek Letters:** $\alpha, \beta, \Gamma, \Delta, \Omega, \xi, \varphi$
- **Calculus:**

$$\int_{-\infty}^{\infty} e^{-x^2}\,dx = \sqrt{\pi}$$

- **Set Theory:**

$$\forall x \in \mathbb{R}, \exists y > x \text{ such that } y \in \mathcal{S}$$

Handling Long Equations

For complex derivations, use the `align*` environment:

$$
\begin{aligned}
f(x) &= \sum_{n=0}^{\infty} \frac{f^{(n)}(a)}{n!}(x-a)^n \\
&= f(a) + f'(a)(x-a) + \frac{f''(a)}{2!}(x-a)^2 + \dots \\
&\approx \underbrace{1 + x + \frac{x^2}{2}}_{\text{Approximation for } e^x}
\end{aligned}
$$

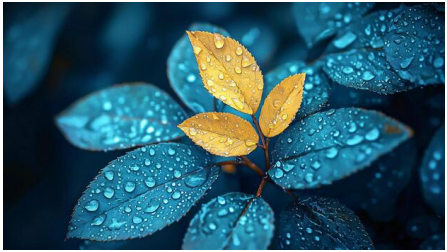
Note how the math font blends well with the comic style text.

Split Layout (Left/Right)

Concept Description

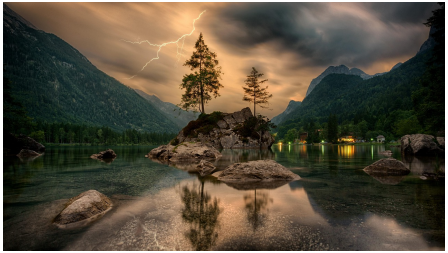
This image demonstrates the core principle of the algorithm.

- Input processing
- Feature extraction
- Final classification

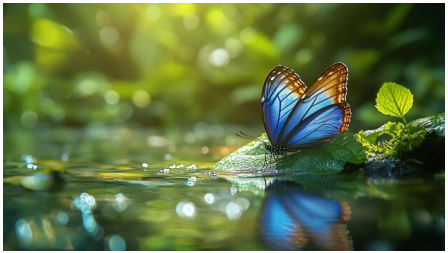


2 $\times$ 1 Figure Layout

Comparing two results side-by-side:



Result A



Result B

3×1 Figure Layout

Evolution of the dataset over time:

$t = 0$

$t = 10$

$t = 100$

2 × 2 Figure Layout

Source Code (Minted)

Here is a Python function using our custom colors:

<MINTED>

The frame color is gray, and keywords are highlighted.

Algorithmic Pseudocode

Algorithm 1 Euclidean Distance

1: **Input:** Points P and Q
2: $sum \leftarrow 0$
3: **for** $i = 1$ to n **do**
4: $\quad diff \leftarrow P_i - Q_i$
5: $\quad sum \leftarrow sum + diff^2$
6: **end for**
7: **return** $\sqrt{sum}$

Critical Information

Sometimes we need to draw attention to warnings.

Warning: Convergence

The algorithm may not converge if the learning rate $\eta > 0.1$. Please ensure normalization is applied first.

Summary

- **Style:** Comic look + Serious Math.
- **Structure:** Clear hierarchy with Headers/Footers.
- **Visuals:** Flexible Grid Layouts.

Thank You!

Any Questions?