Homework #0 (due 9/7/18)

Instructor: Jonghyun Choi   *Student name (ID#):*

Please specify your name and your student ID in the top heading. Hand in a hard copy with your written answers.

Problem 1 : Survey

Please rate yourself by your subjective criteria.

1. How would you rate your programming skills (1-10, 10 best)? How would you rate your math skills?
2. What are your goals in this class?
3. Are you familar with Python?
4. Are you familar with git?
5. Are you familar with PyTorch?

Problem 2 : Basic math exercises

The following are true/false questions. Please answer it less than one minute.

1. $\log x + \log y = \log(xy)$
2. $\log[ab^c] = \log a + (\log b)(\log c)$
3. $\frac{\partial}{\partial x}[5x^2 + 3x] = 10x + 3$
4. $\frac{\partial}{\partial x} \log x = -\frac{1}{x}$
5. $p(a \mid b) = p(a, \ b)/p(b)$
6. $p(x \mid y, z) = p(x \mid y)p(x \mid z)$
7. $\|\alpha \boldsymbol{u} + \boldsymbol{v}\|^2 = \alpha^2 \|\boldsymbol{u}\|^2 + \|\boldsymbol{v}\|^2$, where $\|\cdot\|$ denotes Euclidean norm, α is a scalar and $\boldsymbol{u}$ and $\boldsymbol{v}$ are vectors
8. $|\boldsymbol{u}^\top \boldsymbol{v} \geq \|\boldsymbol{u}\| \times \|\boldsymbol{v}\|$, where $|\cdot|$ denotes absolute value and $\boldsymbol{u}^\top \boldsymbol{v}$ is the dot product of $\boldsymbol{u}$ and $\boldsymbol{v}$
9. $\int_\infty^\infty \exp[-(\pi/2)x^2]dx = \sqrt{2}$